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ABDOMINAL SURGERY AND ITS EVOLUTION AND INVOLUTION.

Read and discussed before the Marion County Medical Society, November 15, 1892.

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While walking with a professional friend in the city of Chicago, I asked what had become of a certain doctor with whose name I had become familiar through his contributions to surgical literature some five years ago. The answer was, "He is doing some practice now." This good doctor's answer impressed me and begat other questions. How much of our current literature comes from those who write before they practice? How much from doctors who practice before they write, and what is the real motive which prompts the writer? Is it to place upon the altar of science the tithes of his experience? If so, have they been tested in the crucible of truth, and is he giving us only the atom of gold which he has found among the dross, or is our embryonic specialist intoxicated with the little knowledge gained by reading plus that obtained by his maiden efforts in operating, and like the bumblebee, largest when he first emerges from the comb, "seeking to be heard for his much speaking." If the latter is true, the average student must be wide awake to winnow the wheat from the chaff when the literature of abdominal surgery is burdened with productions from those who have little surgical aptitude, less originality and still less wisdom born of experience. Having read an article headed "Who Should and Who Should Not Teach Gynecology?" it will not be considered impertinent, I hope, to ask who are our teachers? What is their warrant for teaching? Really, are many of them specialists at all? Prof. J. T. Hodgen, of St. Louis, defined a specialist as "a most accomplished physician and surgeon and something more." "Too often," said the doctor, "he is something less." It is incontestably true that the cultivation given a mind, already broad, by a dozen years of general practice, widens and rounds up the specialist's professional character as nothing else can do. At the same time, as one extreme follows another, so the great master workmen in our specialty have been and are men who by strong will powers forced broad faculties to work in a narrow channel, becoming educated to the work, capable of comprehending the great principles of our science, and so acting in a given emergency as to bring honor, not disgrace to our noble art. These masters, most of them, first became familiar with all diseases, their complications and their treatment. Then finding it necessary that the mind be relieved of the burden incident to the thorough study of so broad a subject, they abandoned general practice to the end, that their faculties could be unrestrained in their tendencies toward special studies and investigations. It is the taking the mind off from many things that enables it to concentrate with force and effect on a few things. To plow deep implies no attempt to turn a wide furrow. What contributions to science and blessings to humanity have come from concentration of the thoughts of great brains into specialties! To illustrate, I need only to mention the name of Edison. Before the hard-working general practitioner concedes to their demand for recognition as a specialist, it might be well for him to ask a few questions: What natural adaptation, what general research in anatomy and pathology has the alleged specialist acquired? Has he served for a sufficient time under a master? Is he so located and situated as to warrant him in abandoning all else and making it a life's work, and thereby acquiring a large experience? In much of our work the mind follows the educated finger by faith where sight is impossible. I still cling to the aphorism used before our State Society some years since, that honor to American statistics was in the direction of many operations by the few and fewer operations by the many. That there must be amateurs on every stage may be true. It is equally true that the great masters of the drama added to natural talent long and thorough drill under a master. These masters will not essay a single performance without their accustomed support. The surgical stage should be no exception, at least until our great actors shall be able to avert the heartaches which come to them when the curtain falls on a death scene. The emphatic statement of J. Greig Smith is in point: "Abdominal surgery is no longer a field for legitimate and versatile experiment. Certain fixed and useful laws and customs have been laid down by the dearly bought experience of great men. The abdominal surgeon ought to begin fully equipped with such knowledge as has been gathered for him." This being true of the operator, what of the adventurer who with limited experience seeks to achieve fame by writing up his maiden efforts in operating. When one seeks recognition as an operator or teacher, we have a right to know what reasons they have for the faith they would teach. The facts seem to warrant the assertion that some of the current literature is dangerous. There are many things contained in the literature of what is now our established specialty which would seem to indicate that the writers were not willing to depend upon merit for professional preferment. I have neither time nor inclination to give more than a few examples. They will serve, as I believe, to bring up points enough for the discussion of the evening.

The contributions to our literature which retard rather than aid progress do not all come from begin-

ners. Some distinguished operators write that which the hand of progression will soon obliterate. I have written a few things myself which a riper experience would not have given to the profession. In the *American Journal of Obstetrics* of July, 1889, one Curtis Miller announced that living in the city of Charlestown, W. Va., he had found 144 cases demanding abdominal section; had operated on all of them, and in this number there had been no death. The query instinctively came to my mind, not only how a beginner could have such success, but how could he secure so many cases in so short a time. I wrote to a friend near the Virginia line making inquiries about this phenomenal report, intimating that such an operator could well afford to locate his patients or give the name of attending physician. My friend answered my interrogation by saying he thought this man Miller had been with Tait and was not handicapped by former professional or surgical methods in obtaining cases or records in operating. The statement that this operator had been with Tait was explanatory. I could, as I believed, read between the lines. I have not seen any reports from this operator since. I have, however, seen reports from other operators which I must consider as startling as this. It seems to me that the time has come when our standard medical journals should require something more than the say-so of the operators who publish such astonishing results. Unfortunately, reports are published by operators and those visiting them, and reported from journal to journal, which would put an interrogation point into the eye of Dr. Thomas Keith, of London, similar to those seen when told of the phenomenal results obtained at the hands of Mr. Tait. A number of those who have been to Birmingham use more than the Staffordshire knot in exemplification of their tutor. A few seek every opportunity to differ with a more conservative fellow-worker, and violate the laws of common decency in the use of sarcastic epithets, and then with a sort of "tin horn huxtering" for patients and notoriety make the assertion, that they do all kinds of intra-abdominal operations with a fatality of less than 3 per cent. From the lips of one of Tait's pupils I heard the statement that in 100 cases of removal of the appendages, Tait nearly always had at least five deaths. There are hundreds of women in a state bordering on desperation, with neurasthenia expressing itself locally in one or more of the pelvic organs. They are willing to submit to anything under heaven which the enthusiastic but misguided cœliotomist would advise. His mind, intoxicated with the idea of the removal of a reflex cause, scarcely realizes that the consummate wisdom of a veteran in this line of work is often inadequate to decide whether pelvic symptoms are a local expression of a general neurasthenia or whether the general condition is reflected from a diseased pelvic organ. Physical deterioration is the law of advancing civilization. All neurasthenics are in a condition of mental and physical hyperæsthesia, these general conditions constantly expressing themselves in painful menstruation and tender ovaries. A resort to surgery in such cases is another instance where boldness is *not* tempered by wisdom, and where cutting does *not* cure. Numerous cases have been brought to my observation by doctors who had been reading the dangerous surgical literature of the day; they supposing that I would unhesitatingly open the abdominal cavity in all stages of peritonitis (and this disease has been very prevalent since the epidemic of la grippe) from the very beginning, to the time when the abdomen was enormously distended, with complete obstruction from cobwebbed adhesions of the bowels to cases *in articulo mortis*. Some of them I watched for days and weeks, at last finding indications for operation—operated with success—but in more of them a time never came when I could see my way clear to advise opening the abdominal cavity. For example: In the suburb of Irvington I saw five cases in consultation with Dr. Barnhill, my former pupil. The first one we opened the abdominal cavity, finding extensive pelvic peritonitis involving the vermiform appendix, tubes and ovaries; she made a good recovery. The second had only been sick a few days. The abdomen was distended, the pulse so rapid and feeble that I unhesitatingly stated that no operation was to be thought of, as it would only launch the patient from the operating table into eternity. The third was a well pronounced case of appendicitis which made a slow but sure recovery without any operative interference, notwithstanding I saw the patient a number of times, fully expecting the time might come when an operation would be demanded. The fourth and fifth cases were both well pronounced cases of perityphlitis, neither of them presenting indications for operation and both making good recoveries. Other towns that I have visited over the State have furnished their list of similar cases. The pendulum of surgical aggression has been swung to the extreme. Too many are saying that operative interference offers the only hope. Too often beginners urge operations as practically without danger, not on the basis of their own experience, but on what they believe to be the large and honestly reported experience of those whose reckless use of language in condemnation of a fellow-worker is suggestive of reckless struggling with the truth in reporting cases. I have had my small share of surgical triumphs, and my profession has given me abundant credit for the same, and honored me fully up to my deserts. Far be it from me to be envious of the achievements of any one who is conscientiously doing his best in the service of humanity. On the contrary, I extend the hand of fellowship to all disposed to engage in this specialty, but when my credulity is overtaxed I have a right to console myself as did Hume in his philosophy. He reasoned that Christ never rose from the dead, because he had only the testimony of the twelve apostles, and firmly believed that in that day and age of the world lying was twelve times more common than the resurrection of dead men. In a circular sent me from a life insurance company I read: "During the early part of the current year the death-rate throughout the country was unusually large. La grippe and pulmonary disease made sad havoc everywhere." I believe this to be true. I saw evidence of the epidemic expending its force within the abdominal cavity in a large number of cases. I make chemical tests of urine to determine what anæsthetic to use and to assist me in appreciating the dangers of operating in a given case. In 30 per cent. of my cases I find the specific gravity ranging from 1030 to 1040, with varying quantities of sugar and not unfrequently albumen. This I did not find before the epidemic referred to, but during and since. For successful surgical work I consider good kidneys of very great

importance, and am convinced from observation that in more than 5 per cent. of cases demanding surgical procedure the excretory function of the kidney is so impaired as to be worthy of serious consideration as an element of danger following our work. I have looked in vain for some statement from these phenomenal operators that they were a little less successful during the epidemic. Does the abdominal surgeon stand alone, and not have his death certificates number the more in consequence of these fatal epidemics? Are we to believe that in the hands of these men abdominal sections are uninfluenced by and are a preventive of la grippe? If so, I shall not be surprised if the literature of the near future contains a series of abdominal sections for Asiatic cholera with an astonishing number of successes. Another point to which I would invite attention is, what is meant when the statement is made that A or B has made so many operations without a death? One instinctively asks, "Did the patients simply not die on the operating table? Did they rally from the shock, live until the sutures were removed, regain their feet, and was their condition made better or worse by the operation?" If a statement accompanied these reports as to what is meant by the words "without a death, with success," etc., the truthful operator would have less hesitancy in comparing his record with the truthless.

Exploratory incision has now been accepted as a means of diagnosis, and the current literature of the day would lead the average physician to believe that it was comparatively free from danger. This is true to a certain extent. At the same time, I am well convinced that the so-called simple exploratory incision should only be undertaken by the well equipped and thoroughly competent abdominal surgeon. If the abdomen contains an ovarian cyst or a fibroid tumor, there is strong probability that the diagnosis can be made with reasonable accuracy before the abdomen is opened, but when we admit that the operation is made for diagnostic purposes, we should be willing to concede that the one who does it should have the nimble wit in the ends of his fingers which enables him, by the sense of feeling, to differentiate between the normal anatomy and pathological changes. Not only this, but he should be competent to do anything known to the surgery of the abdomen and do it according to the principles established by the dearly bought experience of our master craftsmen. Many cases have come to my mind where practitioners anxious to obtain the prestige presumably gained by abdominal section, have ventured to open the swollen abdomen with no definite idea what they were going after, where they were going to locate it, or what they were going to do with it, after they had found it. After opening the abdomen freely, with the hope that they might see something which the fingers had not been able to feel, as their fingers had taught them no more about the abdominal viscera than the fingers taught the obstetrician in his first examination, they found the intestines distended with gas, piled up in farmidable stacks over the abdomen and even falling down on the table. Their position was something like the man who attempted to repair the clock; he had no difficulty in taking the clock to pieces, but when he attempted to put it together again he imagined he had wheels enough for fourteen clocks. So the amateur operator would believe there were intestines enough to fill fourteen men or women. In cases where the abdomen is markedly distended, the experienced operator might do no better; but the veteran in abdominal surgery, never having much faith in operative procedure for peritonitis, has learned to know that unless there is some evidence of localization of the process and products of inflammation, surgical interference is worse than useless. Who for a moment would think of plunging a trocar into the chest in acute pleuro-pneumonia, much less to think of making free incision for the purpose of irrigating and destroying the germs of inflammation. A little later, when the pleural cavity is filling with serum and the absorbents are not able to take up the same, or if this fluid is becoming purulent, then opening the chest, with a thorough washing and drainage, is a surgical procedure where boldness is tempered by wisdom. The same reasoning applies with even greater force to the serous lining of the pelvis. In abdominal surgery, as in medical practice, the judgment we use in the adaptation of the remedy, not only to the disease but to the particular stage of disease, is the measure of our success. I know of no inflammation that is not of septic origin. In the earlier stages of septic peritonitis surgical interference is but adding fuel to the flames. Knowsley Thornton (*American Journal of the Medical Sciences*, October, 1888, p. 371) says: "The more I see of abdominal surgery the more I am convinced that operation during acute peritonitis is very dangerous; whereas in the subacute and chronic stage the patient bears the operation as well, or better, than with a perfectly healthy peritoneum." There are additional agents which materially aid in tiding the patient over the acute stage of disease to the time when the microörganisms have become materially less active, so that surgical efforts are curative by removal of the localized products of inflammation. Some of the literature of the day, given out by distinguished members of the profession, is to my mind strikingly misleading, if not dangerous. For example, Mr. Tait, whose fame is world-wide, and who has been a great benefactor of women, in his book on Diseases of Women and Abdominal Surgery (page 117) says: "The proposal to deal with cancer of the uterus by complete removal of the organ meets, I need hardly add, with my strong disapproval. My reasons are, that its primary mortality must always be heavy, and that the few cases in which the disease does not recur are clearly errors of diagnosis. Further, operations for a disease which give unjustifiable secondary results have no place in good surgery; and it complicates in the confused mind of the public, the issue of electing to have operations performed the secondary results of which are perfect. As I like my work to be stable, I have always opposed this cutting out of the uterus for cancer, and my first judgment has been confirmed by the results." That many women are given a respite from death, others' lives materially prolonged, while still others are being cured by this operation, some of us know. For my part I could produce more than a score of women who have been blest by this operation, done at intervals from six years down to one week. It is very gratifying to Mr. Tait, no doubt, to make the reference he does to the uselessness of extirpation of the cancerous uterus or Emmett's operation on the cervix. It would be very amusing to me to see these great benefactors of womankind, and Mr. Tait in particular, defend him-

self in the presence of a few dozen of these women who are enthusiastic in their expression of the blessings they have received from these operations. It is not surprising, however, that vaginal extirpation of the uterus should have been slow in gaining recognition as a comparatively safe procedure. It has been practiced by many with an utter disregard of the sound surgical principles which govern opening the abdominal cavity above the pubes. Even recently, I note a doctor insisting that many forceps to secure the broad ligament are equally as good as a lesser number. When an operation is done in that manner, it leaves the contused gangrenous portions of the broad ligament to come in contact with portions of the omentum, mesentery and intestines, thus inviting septic peritonitis. Now, all of this could be easily prevented by first constricting the broad ligaments to a round mass by a single ligature, bringing them down into the angles of the wound, and transfixing with additional ligatures or applying a single clamp. In this way we have, not only complete sero-serous approximation of the entire wound with no raw surface whatever left within the perieoneal cavity, but more than that, by this rounding and bringing down of the broad ligaments and fixing them in the upper angle of the wound, we have the patient guaranteed against vaginal prolapse and its resultant cystocele and rectocele; sequelæ almost invariably following the operation where many forceps are used, and the broad ligaments are not first rounded. When about to visit Birmingham, Eng., some years ago, a professional friend, whose reputation in gynecology is international, provided me with a letter of introduction to Dr. Savage. I thought I knew of the man, believing that he was the author of a book on the female pelvic organs. I was mistaken. My introduction was to another man who in reality I had never heard of. I found him sitting as Chairman of the Gynecological Section of the British Medical Association. I shall always love my friend the better because of his kindly efforts to have me know this man. The meeting adjourned at 3 P.M. I accompanied him to his private hospital, saw him remove a kidney. I then rode with him to the Birmingham Hospital for Women, a distance of two miles, saw him make two abdominal sections. I never saw a more careful, painstaking, and at the same time rapid operator handle an instrument. I looked at my watch and found that I had been introduced to the doctor just two hours. I found that he had equal rights in the Birmingham Hospital for Women with the renowned Lawson Tait and was doing the same amount of work there, and wondered why the world had not heard more of this man. I learned that he had as much work as he could possibly do, and that there was so much reckless reporting of cases, that he was disinclined to compete with those less conscientious and truthful in their work. Most of our American cities have similar men. The reports of their conscientious, painstaking work are rarely seen. They are unwilling to compete with the modern hustlers with their loud declarations of success in societies and journals, aided by sycophants whom they employ to write their praise. Our literature has its good and bad teaching coming from those high and low in the profession; coming from those hustled into notoriety by cliques and rings, and coming from those manfully struggling against many obstacles thrown in their way. After all, we find in it an abundance of knowledge and some wisdom.

"Knowledge and wisdom, far from being one,
Have ofttimes no connection; knowledge dwells
In heads replete with thoughts of other men;
Wisdom in minds attentive to their own.
Knowledge, a rude unprofitable mass,
The mere materials with which wisdom builds,
Till hewed and squared and fitted to its place,
Doth but encumber whom it seems t' enrich.
Knowledge is proud to think it knows so much;
Wisdom is humble that it knows no more."

—*Cowper.*

By all the sacred memories which cling to the words mother, wife, sister or daughter, let him, who aspires to be the physician of women, be a gentleman. "A man of the keenest sensibilities and the most delicate sympathies." Let him be an *honest* man. Let *truth* ever be his guiding star. I can say in all sincerity that I believe my profession and my specialty have as large a per cent. of honest men and honest women as any other profession or any other business, and have no remedy to suggest to correct the wrong doing of the few who, disregarding that beautiful aphorism, "the surest way to secure professional preferment is to merit it," hustle for business in a way that would be beneath the dignity of men engaged in commercial pursuits.

"It were a heaven on earth
To have our minds illumined with knowledge
To move in charity
And turn on poles of truth."

—*Sir Wm. Gull.*

A DAY WITH PROFESSOR VIRCHOW AT CHARITÉ HOSPITAL, BERLIN.

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Among the most interesting memories that I retain of my trip to Europe last summer, was a visit that I paid to Professor Rudolph Virchow in Berlin, on July 23, 1892. Professor Virchow, to all Americans (and indeed to all men of every nation who sympathize with the cause of free speech and free thought), is the most interesting scientific man in Europe. He is not only preëminent as a scientist and pathologist, but is a man who always has aided the cause of freedom everywhere and especially in his own country. He was the man whom Bismark in his days of arbitrary power especially hated. In 1849, and for seven years thereafter, he was banished from his professional chair at Berlin, on account of his liberal opinions, but was recalled to his duties in the University in 1856. During the period of his absence he distinguished himself by the lectures he delivered in the University of Wurtzburg these were the first germs of the ideas, which finally developed into his great book on cellular pathology. Professor Virchow is director of the famous pathological institute of the University of Berlin, which is one of a group of buildings composing the medical department of that institution. The Charité Hospital, in which clinical instruction is given to the medical students of the university, and the laboratory buildings in which Professor Koch carries on his investigations, are also situated on the same grounds. In company with Dr. Fulleborn I attended Professor Virchow's lecture, which was held at 10 A.M., the subject of the lecture was carcinoma. I need scarcely say that I was deeply interested in both the man and

his subject. The room in which he lectured will probably accomodate two hundred students; every seat was filled and the students were almost all engaged in taking notes of the lecture, and were apparently eager to catch every word that fell from his lips. Around the table near which he lectured were a large number of pathological specimens, both in jars and on dishes, illustrative of the lecture. These were passed around the class from hand to hand as the lecture proceeded thus fully illustrating the subject.

Professor Virchow lectures in an easy colloquial manner. He speaks beautiful German and every word is pronounced so clearly and distinctly that he is easily followed even by foreigners who have an imperfect knowledge of the German language. After the lecture was over I went to his private office in the university building, and presented my letter of introduction from Howard University, and was very courteously received. Professor Virchow is of medium height, he is somewhat stout in figure, and is apparently in excellent health and vigor for a man of his years (he having passed his seventieth birthday).

He speaks excellent English and seems very kindly disposed towards Americans. During our conversation I asked him if he could not come over to Chicago during the coming year to our Columbian Exposition, and assured him that I felt certain he would receive a royal welcome from the medical profession in America. He replied. "No I think I cannot come; I am now past seventy and America is very far". His office was nearly filled with a large number of skulls of varying shapes and sizes, which he had brought there for the purpose of study. He stated to me that he was now engaged in writing a book upon the crania of America, which would be published during the coming year. On parting from him he expressed a desire to be remembered to his profesional brethren in America. After leaving Professor Virchow I went to his demonstration room, where every day are brought the pathological specimens procured from the bodies of the patients who had died in the hospital during the previous twenty-four hours. These specimens are procured for examination and study by the medical students of the university, and were brought in on fifteen wooden dishes or trays, about sixteen or eighteen inches in diameter; each one of the dishes contained from one to three specimens. When we remember that all these were the results of the post-mortems made in the hospital in a single day, we can form some idea of the wealth of clinical material available for study by the medical students of this great institution. In front of the tables in this room is a miniature railway, by which the microscopes can be propelled along the rows of students, so that they can be examined by each one of them without interrupting the lecture or demonstration. I then paid a visit to the ward for contagious diseases, and to the surgical wards of Charité Hospital. The wards were clean and fairly ventilated, but I confess I was not as favorably impressed with them as I expected to be; there was a lack of that exquisite neatness that I have seen in some other hospitals, and some of the wards were much overcrowded. I went to the operating room of the hospital, and witnessed an operation for the removal of a tumor from the right side of the brain of a patient, an inmate of the hospital. The operation was performed by Professor Bartleben assisted by Professor Joli. It is scarcely necessary to say that the operation was performed in the masterly manner that might be expected from surgeons of such eminence. The operating room in which the above operation was performed, somewhat disappointed me. It was small in commodius and would not have accommodated more than sixty or seventy students. The operation was performed aseptically and under the influence of chloroform anæsthesia. Sulphuric ether used as an anæsthetic seems to be seldom employed on the continent of Europe at the present time—at least such was my experience during the summer of 1892. One very grave fault in the operation was the allowing of the students and assistants to touch the patient and the surgical instruments used during the operation. This to my mind vitiates entirely the possibility of performing an aseptic operation under such circumstances. The very essence of an aseptic operation presupposes an aseptic patient, operated upon by an aseptic operator with aseptic surroundings. No person or thing should be allowed to touch the patient until after the wound is dressed and thoroughly closed from the air and all risk from contagion. (During my stay in England I saw the very same error committed in three of the larger hospitals in the city of London.) No carbolic spray was used during this operation and in fact during the whole summer I was in Europe I never saw it once used. The many layers of protective gauze, mackintosh, etc., are now replaced by a simple layer of iodoform gauze, with an abundant layer of aseptic cotton, firmly retained by means of bandages. Another remarkable change both among the surgeons of Europe and in this country is the growing disbelief in the efficacy of the ordinary antiseptic solutions that are used as germicides during surgical operations. Solution of carbolic acid has been shown to be a very weak germicide, and the same may be said of solutions of boric acid and of the other solutions commonly used for this purpose. Mercuric chloride has until the present time been our sheet anchor as a germicide. Yet recent investigations in our own country, at the University of Michigan (and published in the *Medical News* of October 1 and 8, 1892) and ,at the Johns Hopkins University (published in the Johns Hopkins Hospital Bulletin of April, 1891, p. 50,) have shown that solutions of mercuric chloride, when used as a germicide, are often inert, and still oftener actually injurious when applied to the tissues during surgical operations. Observation teaches us that the concensus of opinion of the great masters of surgery is fast settling upon the conviction that there are practically only two methods of keeping surgical and all other wounds aseptic. One of these is to keep wounds made during surgical operations as dry as possible (in this way diminishing the growth of bacteria, by eliminating as far as possible the moisture which is essential to their existence). The other method is to use only recently boiled water in contact with them. Every instrument and surgical appliance used must be sterilized immediately before using, either by boiling in water containing 1 per cent. of carbonate of soda, or by being exposed to a dry heat above the temperature of boiling water for at least one-half hour. To this, of course, must be added absolute cleanliness of the operator, the assistants, nurses and of all the appliances used in surgi-

cal operations—the operating room and all the surroundings included. Perhaps I ought not to close this article without some mention of the famous pathological and biological laboratories of Professor Koch which are also located in the grounds adjoining Charité Hospital. These comprise three very unpretentious frame buildings, which contain the bacteriological apparatus microscopes etc., required in the investigations which professor Koch has conducted and still carries on, in his experiments on the preparation of tuberculin and analogous products.

I did not try to see Professor Koch, as I was informed he was so engrossed in his studies that he was very difficult of access. The week before I reached Berlin the highest official in rank of the medical department of British India had come to visit him, bringing with him the highest credentials, and had failed in securing an interview with him. I presume he considers it absolutely impossible for him to see the multitudes of callers who visit him from all parts of the world, and prefers to keep his time sacred from intrusion, so that he can pursue his investigations undisturbed.

In an article of my own, published in the *Medical News* of December 17, 1892, I have given the details of my visit to the Paris hospitals in August, 1892, and at the risk of offending some of my friends I am compelled to say that neither in the hospitals of London or Berlin did I see aseptic surgery carried out with such perfection of detail and magnificence of results as I saw displayed in the hospitals of Paris.

Finally, I would say to American students, that it is entirely unnecessary for those who desire to study the principles of aseptic surgery to go to Europe at all. At the German Hospital, the Roosevelt Hospital, the Polyclinic and others in the City of New York, and at the principal hospitals of Philadelphia, Chicago, Baltimore, Washington, etc., aseptic surgery is taught and practiced as perfectly as it can be found anywhere in the world. If American students desire the culture that only travel can give, by all means let them go to Europe; if they desire boundless wealth of material for clinical study, let them go to London, Vienna or Berlin; but if they desire, besides these advantages, to see fineness of technique in carrying out the principles of aseptic surgery, my advice to them would be to go to Paris and study there. I am very certain they will never regret their choice.

DIURETIN.

Read before the Pathological Section of the Chicago Academy of Sciences, Feb. 9, 1893.

BY JAMES B. HERRICK, A.B., M.D.,

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The experiments of Schroeder reported in 1889, and confirmed by clinical observations made at Schroeder's suggestion, the same year by Gram, of Copenhagen, established the value of the alkaloid theobromine, a product of the seeds of *Theobroma cacao*, as a diuretic of great power, acting by direct stimulation of the renal epithelium and lacking in the unpleasant effects upon the nervous system, tinnitus, restlessness, insomnia and delirium, attributed to its homologue caffeine.

Gram, after trial of many compounds, overcame the disadvantage of the insolubility of the alkaloid by forming, by combination with salicylate of sodium, a double salt, sodium-theobromine-salicylate, which should contain at least 46.5 per cent. of the theobromine (Knoll's is said to contain 48 per cent.) and to which the name diuretin has been given. The therapeutic as well as commercial value depends upon its richness in theobromine. The compound occurs in the form of a white powder, soluble in less than its own weight of warm water, the solution remaining perfect on cooling. Pure diuretin should burn away without residue and should dissolve readily in soda solution. The daily amount administered —sixty to one hundred and twenty grains—is best given in divided doses of fifteen or twenty grains in solution, pill or capsule. Exposure to the air permits of the absorption of carbonic dioxide, forming an insoluble compound, so that the drug should not be given in powder. With acids or syrups containing the fruit acids the theobromine is precipitated as a white powder. For solutions, therefore, water is the best vehicle, being flavored if thought advisable, to conceal the slightly sickish-bitter taste, with peppermint, wintergreen, or some other aromatic. Usually very little, if any, objection is made by the patient, because of its taste or any unpleasant effects.

Since Gram's paper in January, 1890, numerous observers have reported their experiences with diuretin. Hoffman, Koritschoner, and Kouindji-Pomerantz, published articles the same year, confirming Gram's and Schroder's position as to the remarkable diuretic effect of diuretin and its value in removing dropsical fluids. In Koritschoner's series of thirty-eight cases from the Vienna Hospital, excellent results were obtained in all, save five who came to the hospital practically *in extremis*. The cases successully treated included dropsies from cardiac and renal diseases, from cirrhosis and cancer of the liver and from tubercular peritonitis. The only unpleasant effects noted were, occasionally vomiting and diarrhœa. Koritschoner, after a dosage of one hundred and fifty grains a day found palpitation and extremely anxious expression of countenance to follow. He produced this result both in a patient and in himself by this dose, which may therefore be looked upon as a maximum daily amount. The removal of the dropsical fluid in some cases was so rapid as to cause alarming collapse. Koritschoner, therefore, advises that the first doses should be small and gradually increased in size until the maximum dose is given, or the desired effect produced. In twenty-three of the thirty-eight cases the effect was most excellent and it could only be said to be a failure in the five before mentioned cases, who entered the hospital beyond all hope of aid. In dropsies due to cardiac disease the result was most brilliant. Not only was no irritating effect produced on the renal epithelium, but in two cases of acute scarlatinal nephritis it caused prompt response in an increased activity of the kidney, and during its administration blood and casts disappeared from the urine.

Hoffmann made careful observations in Erb's clinic at Heidelberg, on seventeen cases of dropsy in which diuretin was given, and found the effect in dropsy of cardiac origin most remarkably satisfactory. In nephritis his results were not uniformly good, the best being obtained in the acute form. In cirrhosis of the liver the result was negative. Hoff-

man calls attention to the fact that the amount of urine passed under the influence of this drug, is in direct proportion to the amount of dropsical fluid present, while the specific gravity decreases with the increase in the amount of urine. It may be mentioned in this connection, that others, as Masius and Kress, have seen the specific gravity of the urine remaining high, owing to the greater amount of solids eliminated, notwithstanding the free diuresis. Contrary to Schroeder and Gram, who regarded diuretin as a purely renal stimulant, he finds as the result of careful watching of the pulse and heart, including the use of the sphygmograph, that under its influence the pulse becomes slower, fuller, stronger and more regular. The only unpleasant effects noted were, in a few cases, slight vomiting and diarrhœa, completely offset by the removal of the dropsical effusion, the improvemet in the heart's action, disappearance of bronchial catarrh, dyspnœa and insomnia.

Mme. Kouindji-Pomerantz, as the result of experimental and clinical investigations in the laboratory of Dujardin-Beaumetz, reached the conclusions that diuretin, in daily doses of forty-five to seventy-five grains, is a diuretic of greater power, though less toxicity, than caffeine, with no action upon the nervous system and little effect upon the heart and producing no unpleasant urethral symptoms. It acts by stimulating the renal epithelium and is of great use in dropsies where this epithelium is not so hopelessly damaged as to be out of reach of all drugs. Patients do not become rapidly habituated to the drug. It should be given about three hours after meals to avoid unpleasant gastric symptoms supposed to arise from the action of the gastric juice upon the remedy, when it is taken with the food.

During 1891, reports from various sources, mostly German, appeared confirming, in the majority of instances, the conclusions of the observers of the year previous. Geisler had excellent results in the dropsy of valvular heart disease and in that of acute nephritis, while in myocarditis, chronic nephritis and hepatic cirrhosis the results were negative. Pfeffer in forty cases had good results in cardiac dropsy as well as in chronic nephritis and hepatic cirrhosis. His experience in acute nephritis was not so favorable. In some cases the amount of urine for twenty-four hours was six litres. Both Geisler and Pfeffer regard diuretin as a cardiac tonic and found after its use an increase in blood pressure. Schmieder and Siefart agree with others that the best results are obtained in cardiac dropsy and where there is general circulatory disturbance, though the latter obtained fairly good effects from diuretin in dropsy from portal vein obstruction.

In this country, Dr. Robert H. Babcock, of this city, was one of the first, if not the first, to report on the use of diuretin. He had excellent results, especially in dropsy dependent on valvular heart disease, and was convinced that, as Hoffman early asserted, the remedy has an action upon the heart as well as upon the kidney. Laganà regards diuretin as the very best diuretic known, acting as well in acute as in chronic affections, having no deleterious influence on the kidney and more certain in its effects the more extensive the dropsy. He employed it in dropsy of heart disease, nephritis, hepatic cirrhosis and in acute and chronic pleurisy. Demme obtained good results in children in scarlatinal nephritis and in cardiac dropsy. Œdema in acute nephritis disappears, according to his observation, more rapidly under the influence of this drug than of any other.

Two unfavorable reports were made, one by Chmelnicku from Würzburg, and the other by Nickstaedt from Erlangen. The former found it of small benefit not alone in nephritis and portal vein dropsy, but in valvular diseases of the heart. In cardiac dilatation due to emphysema, however, the good effect was obtained. Nickstaedt by doses of sixty grains per diem produced in the healthy and the sick, malaise, headache, vomiting. He obtained less favorable results than with squills, acetate of potassium or calomel and thinks the use of the drug should be restricted to cases of dropsy where other diuretics fail.

In 1892 several reports have come in, among them an unfavorable one from Hare, of Philadelphia, and a favorable one from Frank of Prague. Hare's report is but preliminary and based on the observation of four cases. His cases are not the ones in which we should expect the most marked effects from the remedy when we consider that it is in cardiac dropsy that its influence is most pronounced and the effect shown on the urine is in proportion to the degree of dropsy. His first case was one of valvular disease with albumen, but no dropsy; no diuresis. Second, valvular disease, moderate œdema, moderate diuresis, which Hare attributes to digitalis rather than to diuretin. Third, general anasarca, albumen, no valvular disease; no increase in amount of urine. Fourth, enlarged prostate, concentrated urine, no œdema; no marked effect, though no accurate measurement of urine was possible.

Frank in von Jaksch's clinic, as the result of experience with thirty-four cases, regards diuretin as a superior diuretic in cases of dropsy and as a heart tonic, though inferior in this latter respect to digitalis. His best results were in cardiac dropsies, though in chronic nephritis, pericarditis, hepatic cirrhosis, he had fairly good results. In one case of chronic nephritis the effect was most remarkable. The patient passed, on the fifth day after taking the remedy, 3750 c.c. instead of 250 c.c. of urine. With this there was improved action of the hypertrophied and laboring heart and a rapid disappearance of the hydrothorax, hydroperitoneum, etc. Diuretin was stopped and digitalis begun and the amount of urine decreased at once. That the improvement in the heart's action was due to the effect of the remedy on the heart and not alone to the disappearance of the dropsical fluid, was proven, because in many of his cases "the pulse was good so long as the diuretin was continued, but became poor when it was stopped." Others have noted the bettering of the heart's action before the disappearance of the œdema, indicating a primary effect of the drug on the heart. In all of Frank's cases where any favorable result was obtained there was a six to fifteen fold increase in the urinary secretion. There was no renal irritation. In two cases albumen disappeared while the drug was being taken.

I desire to submit reports of the following cases:

Case 1.—Mrs. K., forty years of age, resident of Peoria, came under my care in 1891 with marked œdema of lower extremities, abdominal ascites, hydrothorax. The valvular disease of the heart, that was at the bottom of the trouble, had been previously unrecognized and consequently untreated. The heart was hypertrophied and dilated, arhythmic in its beat and a loud murmur could be plainly heard. This was made out later to be a mitral regurgitant

murmur, it being impossible at first to locate definitely the valvular lesion on account of the tumultuous and irregular action of the heart. Mrs. K. suffered from intense dyspnœa and orthopnœa. This seemed a favorable case for treatment by rest and digitalis, which were prescribed and in addition, diuretin in fifteen grain doses four times a day was ordered. The effect was seen inside of twelve hours. Urine was passed in large amount every hour, day and night, and the abdominal ascites began to diminish at once. In two weeks all evidences of œdema had disappeared, the pulse was much more regular, and breathing became easy, the patient being able to lie down in bed without a sense of suffocation. Diuretin was discontinued and she returned home with instructions to continue the digitalis. In three weeks I had a letter from her asking for the other medicine (diuretin) as she was now passing a small amount of urine and was again becoming dropsical. Since then I have heard nothing from her.

Case 2.—Mr. K., from Ohio, fifty-two years of age, gives history of acute rheumatism nine years ago and of heart trouble ever since that date. Has taken largely of digitalis, yet during the last six months the heart's action has grown more irregular, dyspnœa more annoying and abdominal ascites and œdema of legs have reached an extreme degree. Entered the Presbyterian Hospital November 1, 1892.

Examination showed Mr. K. to be somewhat emaciated, jaundice fairly well marked, abdominal cavity tensely distended with fluid, legs œdematous, fluid in either pleural cavity. Mitral regurgitant murmur very loud, tricuspid systolic murmur, pulsation of jugulars. Urine, ℥xi, trace of albumen, casts.

November 3, tr. strophanthi gtt. vii t. i. d. and diuretin gr. xv q. i. d. ordered. Urine was passed in the next forty-eight hours, as Mr. K. said, in "enormous quantities." The first night he did not close his eyes in sleep, as he had to urinate every thirty minutes. The diuretin on November 6, was given in doses of eighty grains per diem. November 8, amount of urine over one gallon. In two weeks there was no œdema of the iegs, the waist measure was lessened by nine inches, the heart was more regular and the enlarged liver, firm yet smooth, could be clearly made out extending two inches below the costal arch in the mamillary line. It pulsated synchronously with the heart and seemed to be the liver of passive hyperæmia of uncompensated heart disease and to give an explanation of the jaundice. After taking diuretin for three weeks in doses of eighty grains every day, Mr. K. had a slight chill, sudden rise in temperature to 103° F., nausea, though no vomiting. There was no sign of exacerbation of endocardial trouble, the urine showed the same amount of albumen as formerly and a few hyaline casts. The diuretin was stopped and in two days all unpleasant symptoms had disappeared. Twenty-four hours after stopping the diuretin there was a perceptible lessening in the amount of urine voided. After three days rest from the drug, its use was resumed and again the free diuresis began. The patient left the hospital December 1, with the abdominal ascites almost unnoticeable, with no œdema of the legs and with the heart beating with a fair degree of regularity and with good force.

Case 3.—H. C., male, 13 years of age. Had acute rheumatism four years ago and has had several attacks since. Has been treated for heart disease during these four years. Late in November 1892, I was called to see him and found a little œdema of the legs and a considerable amount of fluid in the abdomen. There was a loud mitral murmur, the heart was hypertrophied, liver enlarged; occasional vomiting. He now began to fill up with fluid quite rapidly and in a week his trouser's band failed by three inches to encircle the waist. He had to sit up in a chair one night in order to breathe easily. While continuing the capsule of digitalis, spartein and nux vomica he had been taking, he also took now, ten grains of diuretin three times a day. He noticed the next day the increase in the amount of urine passed and in the frequency of micturition; he had to rise four or five times at night. In a week he was able to button his trousers and felt so well that he went to the theatre. After the ascites had disappeared the diuretin was stopped. In about ten days there was a reaccumulation of the fluid, which promptly disappeared a second time under the influence of diuretin. I had this patient buy the drug by the ounce, the druggist putting up a sample ten grain powder, the dose equivalent to the sample powder being measured out and taken in water. For about three days he took forty grains of diuretin daily, but as no perceptible benefit was apparent I dropped back to thirty grains. No unpleasant symptoms showed themselves during the exhibition of the drug.

Case 4.—Mr. B., 55 years of age, from Indiana. Came to Presbyterian Hospital Oct. 8, 1892, with typical history of alcoholic hepatic cirrhosis of some four years standing. Excessive ascites. Never had been tapped and desired to have fluid removed by drugs rather than by operation. He was given salts every A.M. when necessary, and thirty grains of diuretin daily. Urine, before giving the drug was twelve to twenty ounces daily, after taking diuretin twenty to thirty ounces were passed. The daily dose was increased to 60 grs., without perceptible improvement. Dyspnœa became so marked that I aspirated the abdomen October 28th, no bad effect following. October 30, diuretin was given in eighty grain doses. Nov. 2, there occurred a chill, temperature 103° F. pulse 128, vomiting and purging. I stopped the diuretin and in twenty-four hours all these unpleasant symptoms had disappeared. November 11, diuretin was resumed in forty grain doses, and on the 13th, in sixty grain doses. At 8 P.M. on this day the patient had a chill, nausea, diarrhœa, and rapid pulse as before. There appeared also in the left groin a purpuric lesion with a wide erythematous border, that extended half way to the knee and was somewhat tender. The diuretin was at once stopped, a wet boric acid dressing applied over the thigh and in two days the patient was about as before. The skin lesion, save the purpuric stain, promptly disappeared. I aspirated a second time November 18. He left for home November 30, in about the same condition as upon his entrance. I heard from him one month later; he had been tapped twice since leaving the hospital but had had no febrile attacks.

In a case of acute scarlatinal nephritis in a child of 11, the urine under thirty grains of diuretin a day has increased from eight ounces to thirty-one and the albumen has decreased from 50 per cent., by volume, to about 2 per cent. The case has only been under treatment for the nephritis for five days but at this writing the diuretin appears to be acting favorably.

It will be seen that in the case of cirrhosis of the liver the result was unsatisfactory, for though there was a slight increase in the amount of urine, no diminution in the dropsical fluid was perceptible. In the three cases of dropsy due to valvular heart disease the effect was eminently satisfactory, there following promptly, increased amount of urine, rapid diminution of dropsical fluid, strengthening of the heart's action with slowing and regulating of its rapid and irregular beat, improvement in appetite and disappearance of dyspnœa and cyanosis.

In these cases I administered at the same time a cardiac tonic, strophanthus in case 2, and digitalis in the others. In case 1, a part of the improvement can, perhaps, justly be attributed to the digitalis, as this remedy had never before been administered; but the free diuresis and rapid disappearance of dropsy were far beyond anything I have ever seen from ten drops of the tincture of digitalis three times a day, and after stopping the diuretin fluid rapidly reappeared in the abdomen. In cases 2 and 3, digitalis and various other heart tonics had been taken almost constantly, in the one case for nine years and in the other for four. In the latter case, in fact, I had the patient continue with exactly the same capsule (pulv. digitalis, spartein sulph., ext. nuc vom., etc.), he had been taking for many weeks and during the taking of which, the fluid had accumulated in the abdomen. In all three of these cases, too, the diuretin was stopped and within forty-eight hours there was a diminution in the amount of urine and in cases 1 and 3, a reaccumulation of dropsical fluid. Return to diuretin produced the same favorable consequence as at first. The effect of the diuretin cannot, therefore, be questioned. It has seemed to me an advantageous method of administering the drug to combine it, in these heart cases especially,

with digitalis or some other heart tonic. In my cases in this way, a moderate dose of sixty grains a day produced all the results that could be asked. I find that Frank regards this as an excellent method, and Demme, in the case of a child, gave first digitalis and then diuretin after the effect of the former drug on the heart was manifest. The unfavorable consequences, vomiting, slight chill and fever and diarrhœa, disappeared promptly on stopping the remedy. These effects were possibly cumulative, the drug having been administered in the one case for three weeks and in the other for eight days, in either case in increasing doses. Cumulative effect is not noted by other observers and it may be that the effects noted by me are no more than the vomiting, diarrhœa, etc., spoken of by others. The skin lesion which appeared in case 4, is different from anything I have seen noticed. Its occurrence at the time of administration of the maximum dose for this patient, as evidenced by the gastro-intestinal symptoms and its rapid disappearance upon stopping the drug, lead me to regard it as due to the remedy and not solely accidental. Demme, in a ten years old child with amyloid disease of the liver, spleen and kidney, produced by diuretin a rash resembling that of measles. Ninety grains were given in the course of four days. Profuse diarrhœa occurred at the same time the rash appeared. I find no other record of skin lesion due to the ingestion of the drug.

Since writing this article I have had kindly placed at my disposal by Dr. A. E. Halstead of this city, the notes of four cases occurring in his practice, in which diuretin was employed. An abstract of these notes is here appended.

Case 1.—Mrs. E. G., mitral regurgitation; chronic parenchymatous nephritis with acute exacerbation. Total urine for 24 hours ℥v; vomiting, twitchings, slight coma. Given calomel gr. ¼, and diuretin gr. x, every two hours, and in addition a hot bath. Gradual improvement. At end of one week, urine ℥xxiv daily, no vomiting, mind clear.

Case 2.—J. G., mitral stenosis and regurgitation, chronic nephritis. General anasarea, severe dyspnœa; amount of urine secreted in 24 hours, ℥xv. Treatment, magnesium sulphate, ℥ss. A.M. and P.M. tr. digitalis mx., t. i. d., and diuretin gr. x. every four hours. On the second day urine ℥xl. At end of week ℥cxx. At end of two weeks entire disappearance of œdema, dyspnœa, etc.

Case 3.—A. H., aged 83. Diagnosis. Arterio-capillary fibrosis; contracted kidney, secondary mitral insufficiency. General anarsarea, ascites, hydrothorax. Under diuretin, pulse harder, dyspnœa greater, headache and vertigo marked. Diuretin discontinued and jalap, cream of tartar, and later, nitro-glycerin substituted. Under latter treatment amelioration of all unpleasant symptoms.

Case 4.—Miss M., age 17. Chronic nephritis with acute exacerbation; uræmic prodromes marked. Urine ℥viii. Given digitalis, diuretin and calomel. Urine at end of two weeks ℥L.

In these cases of Dr. Halstead's, it will be noticed that a favorable result was obtained in three, while in the case of capillary fibrosis there seemed to be an increase of blood pressure and exacerbation of all the unpleasant features of the disease. The most marked result, in case 2, was in a patient suffering from valvular disease with excessive dropsical transudation, apparently the kind of case in which we are to expect the best effects. While all the benefit derived in these cases cannot be ascribed to diuretin, for other remedies were freely combined with it, Dr. Halstead assures me that from his observation of the cases diuretin deserves the great share of the credit.

That diuretin properly employed, is a remedial agent of great value, must I think, be admitted by all. While the exact pathological conditions that call for its exhibition cannot as yet be specifically stated and disappointing failures will therefore attend its misapplied use in many cases where too much will be hoped for, yet, a study and comparison of the results of the various observers who have employed this remedy in the past three years, yield facts from which certain conclusions can be drawn.

My study of the literature of diuretin, and experience with the remedy seem to warrant the follow-deductions:

1. Diuretin is a diuretic acting by direct stimulation of the renal epithelium and best suited to cases in which there is general dropsical effusion.

2. It is the best medicinal remedy for removing dropsical fluid due to valvular disease of the heart, after digitalis and pure cardiac tonics have failed.

3. It can be advantageously combined with digitalis and pure cardiac tonics.

4. It probably has a direct effect upon the heart as well as upon the kidney, slowing and strengthening its action and improving its rhythm. (This is disputed by some; viz.: Cohnstein, *Ueber den Einfluss der Theombromine, etc., auf den arteriellen Blutdruck.* Inaug-Diss., Berlin, 1892).

5. Diuretin has oftentimes a beneficial effect in other circulatory diseases with dropsy, as myocarditis, pericarditis, aneurism, arterio-sclerosis. Its action is here more uncertain than in valvular disease.

6. In the dropsy of nephritis it can be used without danger of irritating the kidney, the effects in acute nephritis being more certain than in chronic nephritis. Where the renal epithelium has undergone too extensive degeneration, the drug may fail to act.

7. In the dropsy of portal obstruction, and especially of cirrhosis of the liver, it usually fails to give good results.

8. It occasionally causes nausea, vomiting, diarrhœa, palpitation, headache and slight fever; rarely, skin eruptions follow its use.

9. The maximum daily amount that can be given with safety is 150 grains; the average daily amount is 50 to 120 grains, given in divided doses. When combined, in heart cases, with cardiac tonics, smaller doses of diuretin can be employed.

10. It should be given in solution in water or milk, or in pill or capsule, without acids and by preference between meals.

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TWENTY-THREE States, one territory, and the Cherokee and Choctaw nations are protected against quackery by medical examining boards.

ADDRESS ON DIETETICS—MEDICAL FOOD ETHICS NOW AND TO COME.

Delivered before the Section of Physiology and Dietetics of the American Medical Association, at its Forty-third Annual Meeting held at Detroit, Mich., June, 1892.

BY EPHRAIM CUTTER, M.D., LL.D.,
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(*Concluded from page 244.*)

Take La Grippe.—My patients who are on the strict diet of beef and hot water rarely take it, and if they do, have mild attacks. So when patients do have it they should be fed especially for the severe and almost inexplicable prostration. Oat meal is one of the things to help the grip along, but not the patient. In the same category come the starches and sugars in excess, fruits, all vegetable foods, especially when they have been long kept and are not fresh. The best material for cough drops I ever used was beef. I am prepared to hear my learned and skilful laryngological friends say, "Well, this is cranky and new to us, and not to be entertained." I would like to know why we are meeting here in Detroit if not to find out what each one knows? I have sought for others to tell these things but they do not. I think this testimony ought to be known, and if it has come out through such a poor witness as me, please forget all about him, but remember the testimony and defeat it by practical tests, not by opinions unbased on facts!

Otology.—What more frequent cause of deafness than closure of the normally open Eustachian tubes by thickening from catarrh of the post-pharyngeal space, especially by the thickening of the posterior pillars of the palate near the tube. And yet bad food has everything to do with this abnormal thickening. Indeed, nearly all ear diseases have been laid to bad diet by an oberver, and I think he is correct in the main, correct enough to wake up otologists to a more lively course of food ethics. One thing is certain, that oatmeal does not enter the diet list of cases of deafness, as it causes fibroid thickening.

Section of Diseases of Children.—Children are the fruit of man. Potatoes are the fruit of the solanum tuberosum. Who raises the largest and best crop of potatoes? He who gets the best seed, proper manures (soluble mineral food), cultivates and opens the soil so that air can circulate in it, and removes weeds which cut off the food which the crop should have. Nature does her part with rain and sun. Who gets diseased potatoes? He who does not feed well nor care properly for his crop. Other things being equal, the very weakness of the crop makes it a prey to parsites. The principle has been established that good fine fruit of man or vegetables can not be obtained without normal feeding. What a revelation would happen if this Section could enforce proper food in motherhood!

But we must take things as we find them. What is the best way to treat diseases of sucklings? One is, to feed mothers two-thirds animal and one-third vegetable food, and thus ensure a good supply of breast milk; this would sweep away a majority of the diseases incident to dentition, cholera infantum, tuberculosis, stunted growths, etc. To change the conventional ethics of infant feeding needs the active, persistent and interested help of all in this Section. One reason of the resistance is that those who have personal acquaintance with food, at least three times every day of their lives, consider that they know more than the doctors about it, and will not believe wholly what is said.

Section of Oral and Dental Surgery.—I have often seen the decay of teeth arrested in my patients when they obtained the proper amount of mineral food in their diet, so that I have no hesitation in saying to the Fellows of this important Section, one of whom discovered etherization, who have honored our age by the marvellous skill of their dental appliances. Perhaps it may not be out of the way for me to say that the fearful condition of the teeth of my own family roused my attention to the subject of food and I found, as I believe, the trouble to be with common flour at that time (1872), having only one-fourth of the mineral food it ought to have. I am thankful to say that the flour millers have improved the products so that the proportion is nearly doubled if I remember rightly. A large manufacturer of flour, a patient, told me that the miller would make any kind of flour that the public wanted. I was glad to know this. I wish to say also that dentists everywhere have been outspoken and zealous advocates of better feeding. Our associates, such as Dr. J. M. Williams, and G. B. Harriman of Boston, W. E. Dunn of New York, the Maryland and District of Columbia Dental Association, to name no more, have committed themselves to the good cause of better food ethics in dentistry. It is then unneccessary to charge this Section in relation to this matter. They will attend to it perhaps better than any other. The Section of American dentists leads the world. This Association is to be congratulated on the full representation with us of this Section, for I know it will strengthen us in our food ethics.

Neurology and Medical Jurisprudence.—In a paper read to the Association in 1888, I tried to point out the close connection of food with the neuroses. Whether I did so or not, the effort justifies me in connecting food with this Section. I will cite but a few other examples. Take fatty degeneration in the head producing paralysis, apoplexy, aphasia, etc. Take male neurasthenia, due in my opinion to a catarrh of the genital tract, it is a food disease and a cause of insanity and mainly curable by good feeding in severe cases. Constipation is in my opinion a neurosis because the nerve forces controlling digestion are partially paralyzed by the gases arising from bad feeding. Neuralgia and headaches are neurological lesions often due to bad feeding. The Section of neurology would do well to pay more attention to the subject of food as a cause and cure. Indeed, till it does, the present prevalence of neuroses in my opinion will continue. I think it a great mistake to deal with results and not the causes of disease, and if the medical food ethics to come include the prevention of fatty degeneration and genital catarrhs for two things—a blessed consummation will be accomplished.

Jurisprudence.—Probably no more important matter of medical jurisprudence has come before our country than the Paddock Food and Drug bill now passed the Senate and waiting in the House. Should it pass it must be sustained by public sentiment and this should be fostered by this Section. The rights of physicians and patients are recklessly violated by frauds in foods and drugs. [N.B.—The Paddock Pure Food and Drug Bill passed the U. S. Senate, and was endorsed by the Section. It was not endorsed by the Association, as Secretary Atkinson affirmed that

"we do not know enough about it to vote." Is it possible that senators know more about *pure drugs and foods* than the largest representative medical body in the world?]

It has been said that those who feed largely on baked beans and other indigestibles are litigious and quarrelsome; I once saw a judge decree a divorce in a minute or two on the unsupported evidence of physical violence given by the wife who sought the divorce and who was the only witness. It might have been all right but I think the judge wanted to get his dinner as almost every one had done so! After his dinner he would have been less hasty. I took the ground that food, nervousness and divorce were related as cause and effect. I still think that if one hundred married couples were fed so as to prevent nervousness, and if another set of one hundred were fed so as to be nervous, *i.e.*, on sweetmeats, pies, cake, ice-cream, cream of tartar biscuit, white flour bread, asparagus, apples, etc., that the number of divorces would be greater in the latter set than the first. I would also add that more suits for mal-practice would be found in the latter than in the former set, more insanity, to name no more. The subject of food ethics is one of the most important of all that come before this Section in my opinion.

Dermatology and Syphilography.—The skin is the largest gland in the whole body. Many diseases of the skin are now simply classed under inflammation from special and general causes. The germ diseases find a fruitful field on the skin, *i.e.*, great and small-pox, measles, scarlet fever, eczema; even in consumption, we find the epithelia of the skin invaded with the germs of these diseases in bad cases. Now as in the vegetable kingdom, the parasites flourish on those specimens which are debilitated by bad feeding, the same idea is voiced when it is said that one does not have skin diseases badly because of good constitution; but the good constitution came through good feeding! I know a man of my age who has spreed it all his life in liquor and vice and yet his wonderful constitution has resisted syphilis which could not be found in the blood. My father knew a nurse who cared for cases of small-pox in the war of 1812; this nurse had been known to sleep in a bed all night, just after a soldier dead from small-pox had been removed, with no change of bed clothes! He did not have the disease till he became an old man and then, when acting as a nurse during an epidemic, contracted it and died. Food figures in the causes of skin diseases, for example, lobster and clams in urticaria in some; salt food in scurvy; so I think it will not be denied that food ethics ought to have a great deal to do with this section in time to come.

Materia Medica and Pharmacy.—The lively interest as to foods which we see at the present day in all stores of druggists, and the great predominance of food stuffs in the exhibits of our Association to-day, palpably and incontestibly prove that food ethics is an intensely alive subject with those of this Section. If I have said anything against pharmacists offering so much instruction as to foods and seemingly to charge them with slopping over it may be said, as lately in New York, "those that do not slop over have not enough to slop over." Now that we have this Section in our body on equal footing with the other sections, I think I may say as I was an advocate of this exaltation of pharmacy into equal brotherhood here—that I am willing to have the profession instructed by the members of this Section; not only willing but anxious. But I am not willing that all the responsibility of medical food ethics should slip away from the other Sections, nor am I willing to be dictated to by those whose only object is to sell a food which they alone make and which does not come up to the standards even of their own circulars. I think this Section should control the admission of food advertisements in our Association JOURNAL. I am disgusted to see some ads. which are sailing under false colors.

Section of the Practice of Medicine.—Here food is paramount, so much so, that it seems needless to discuss food ethics. If physicians are for the purpose of curing disease, they must remove causes predisposing and exciting. I do not like very much to make any comparisons between others practice and my own; nor am I disposed to shield my own imperfections. Mr. Lawson Tait said in the Section of Surgery of the British Medical Association, 1889, when my paper on "Galvanism of Uterine Fibroids" was up, that I was bold to put my deaths first; I said I wanted to tell the truth, no matter about myself. So here if my testimony favors myself, I ought not to withhold it, as we are after the curing of our patients more than anything else. I am intensely interested in diseases of the heart. I found a physician who was curing cases of hypertrophy, angina pectoris and even with valvular lesions. I found I could treat likewise. It is far more satisfactory to cure these cases than to have them die, especially when they are in your own family, as when your own father and mother have died from heart failure caused by organic and functional disease. Such is my case.

Lately a lady came to me—34 years old, married, no children, quite fleshy. She had been sick with a bad cough which resisted treatment; heart enlarged and tumultous in action. She had been treated as a case of consumption, so regarded if not expressed. I found the following: 1. The blood did not have the morphology of consumption. 2. Crepitant râles rather coarse at base of both lungs behind; no dullness on percussion. 3. Heart's impulse felt and sounds heard from beneath the left axilla to front of sternum; no valvular lesion. Impulse heavy; dullness marked over and beyond the normal precordial limits. 4. Urine highly albuminous. No casts nor fatty epithelia. 5. Uterus anteverted and anteflexed; cavity three and a half inches; hyperæsthesia. This case was put on broiled beefsteak with hot water one hour before meals; no tea or coffee and no vegetable food; relishes, pepper, butter and salt. Iodoform applied to uterus. At once she could sleep all night; heart did not trouble her; cough gone; albumen almost disappeared. She took cold afterwards in her bowels by exposure to an east wind; had return of albuminuria; pain and colic in abdomen; treatment still kept up with the effect of almost complete disappearance of albumen; uterus reduced to normal size; heart quiet, and less external impulse; sleep good; spirits returned; twenty-six pounds lost of flesh. Now, as she is obedient, I think it will not be long ere she is well. [N.B.—She was disobedient, and died later.]

I put it to you, was it not better thus to treat this patient by food as a basis than to treat her as she had been treated? No doubt I could not have done any better had I not been so intensely interested in

such cases, and been permitted to learn that it was better to strengthen a big, fat weak heart and remove the fatty degeneration by food than to let it keep on saddled with bad feeding and no relief?[9]

Consumption.—Probably without knowing it, the practice of medicine includes food treatment. If air is food, then what means the fashionable change of climate to Florida and elsewhere for consumption. I do not believe that bad air causes consumption unless the patient is very much reduced by bad feeding (diet again). I have inhaled, and others have inhaled, millions of the bacillus of Koch with impunity. It has been proved that consumption is not communicable to animals in perfect health from normal feeding. Dr. L. A. Sayre, when a young man collated some forty cases of consumption cured by forced inhalation of air. I have known cases where expansion of the chest by singing cured consumption. Mr. William Ludden, of Brooklyn, (Ludden, Bates & Co.. Savannah), has told me of such cases. Rev. Peter Kimball, of Perth, Amboy, who will be one hundred years old if he lives to March, 3, 1893, has played the fife with special view to protection from consumption of the lungs. I myself now think that if I had not taken the air food treatment by marrying my music teacher and always participating in good home vocal music, I would have had consumption of the lungs following consumption of the bowels. The full expansion of the chest with fresh air I believe will prevent the deposition of tubercle sometimes. Music is a medicine.

At the tenth International Medical Congress, 1890, Berlin, I reported one hundred cases of consumption treated by food, of which forty were permanent arrests and most of them of ten years' standing; some longer. I should not have presented them were it not that I believed I was doing my duty to hand in such a contribution as I had from my own experience; I must say that only the head of my paper was published, the body, arms and legs were left out with the electrotypes appended; I was sorry but an invitation to court at Potsdam was a solace, though I think the Germans in my case manifested not the same regard to a correct presentation of medical subjects as there was manifest in the Ninth Congress at Washington. These one hundred cases do not comprise all that I have had under my care; I took the histories of the seventy cases I published in the transactions of our Association in 1880, and brought their histories down to date as far as I was able, adding thirty cases; there are perhaps one hundred more cases, but their histories are too recent; Koch cured reported consumption in a few weeks; I did not care to publish mine till a reasonable time had elapsed; these one hundred cases have been tabulated and are presented with this address.

A wedding in place of a funeral.—A young woman of eighteen was pronounced incurable in consumption. There was no mistake in the diagnosis, as there were lung fibres in her sputa, signs of cavity in the right upper third front chest; blood had the morphology of consumption. She also had uterine disease. Never did a patient do better on the diet for consumption, and uterine disease treatment; she recovered, and when Christmas evening, 1889, came, in about eighteen months, she was married under an arch of botanic specimens to the happy man of her choice; her first child weighed fifteen pounds (so I was informed by the grandmother) and died at birth; a second child of about two months now blesses her home thus made happy by a wedding in place of a funeral, which would have been impossible but for the medical food ethics I adopt in the practice of medicine. I think these facts are enough to prove that the Section of the Practice of Medicine has everything to do with food.

I want these facts tested, not with opinions not based on facts, but with facts procured in a like way and fairly treated. This will be, I hope, ere the most of us have passed on from these earthly scenes. For some of us the time is short. It behooves us to do what we can now and not waste our energies in combatting opinions not based on facts. It is better to treat causes than results, as Dr. Koch does. So long as any member of the medical profession acts according to the rules of polite society just so long is he entitled to a fair hearing. If he has said the truth it will live; truth is immortal and deathless. No faults of character can undo the truth of physiological or pathological experiments with food and the treatment of diseases. Good work done will prevail in the end when those who have refused it are all forgotten, even if they were millionaires and controlled the medical food ethics of the present day.

The way to do is to test by feeding; I hope that the Section of Practice will not forget its relations to medical food ethics; if it does not forget, in place of a few weddings, there will be tens of thousands to the great honor and glory of our whole profession.

Gentlemen:—In what I have said to the other Sections, I have been trying to impress you with the length and breadth, the height and depth of our own Section. If I have convinced you of the importance of food to the other Sections I beg to assure you of its greater moment to you, and to somewhat take in its far reaching scope. Remove all the other Sections, and you could sustain the work of medicine better than it is now sustained. If the other Sections refuse to consider the subject of food ethics there is more reason for you to take it up and thus help them even when they will not help themselves. I charge you to enter with zeal and vigor on this grand work; let there not be so few to work on so momentous a subject; come and use the Archimedian lever of food ethics to pry up the medical profession to a higher plane of usefulness and honor. Our President, Dr. Marcy, says that the American Medical Association represents the largest body of medical men in the world, that its constituency is greater than that of the British Medical Association; if so, to what a high honor and responsibility you are called! Do not fail to do your duty; if you will lead I will follow; if you will not lead, let some one else! This work must be done. It will be done by others outside, if not by us inside of the profession. Public opinion will compel this work to be done as it did compel the retirement of venesection (to its harm, in my opinion). Food plans which contain much of merit are being promulgated by non-medical women, and reach the laity and do good where I cannot reach. If one, and you may be that one, has an enlarged and fatty heart caused by bad feeding, are you going to throw away the chances of recovery by good feeding, because the medical profession has not endorsed in toto the principles involved in such treatment?

[9] Phys. cases heart dis., Tenth Int. Med. Con. Jour. Am. Med. Assoc., Aug. 22, 1891.

There is work enough for this Section to do for many years; I hope it will be harmonious, and industrious; medical societies beyond the seas will coöperate, I am sure. If America is the food store-house for the world, let it disseminate true principles of medical food ethics as well. It seems to me that a good plan of work would be to take up the dietetics of the Sections, beginning with the Practice of Medicine. Of course, while there is a main object anything germane could come in as side dishes if any had them to offer, besides there might be something of general medical interest, as the pure food and drug bill this year. [N. B.—The present disappearance of the Section of Physiology and Dietetics from the list of Sections, as advertised, is much against the wish of the Secretary, on the ground that it has more work to do than any other, and hence the greatest reason for existence.]

PERSONAL WORK.

Let every member of this Association personally encourage all efforts at improvement of Food Ethics by diet kitchens, cooking schools, all restaurants like Smith & McNell's, New York, where 8,000 meals are daily served from plenty of good food, well prepared and at moderate prices; all steamboats like the Fall River Line, one of whose stewards serves the best porter-house steaks I have ever eaten; all ocean steamships whose cuisine is excellent, as found on the Etruria; such railroad restaurants as found in the Pennsylvania depot in Philadelphia, all places where good coffee is served, etc.; on the contrary, let every member condemn poor cooking, as poor coffee, poor steaks, bad bread, impure drinking water, all places of public entertainment where the service consists mainly of high prices, spotless and brilliant table ware, servants dressed as if to be presented to court (not but that these things are as good as far as they go) but with poor food which does not nourish the body.

Let members when travelling in Europe, when told as I was that I must not drink the water, remember the dictum of Dr. S. W. Abbott, Secretary of the Massachusetts State Board of Health, "that the European hydrant water, as a rule, is better than ours and better managed." Let them not bow down and worship with colic and diarrhœa the menus of the table d'hote, when a meal of beef, bread and coffee taken (as wife and I took it in Paris) at the children and nurses' table, will nourish the body sufficiently in health. In fact, let every member do all he or she can to protect themselves and others from the evils of conventional feeding, which now carry off most of mankind to untimely graves, and this work, added to coöperative labors in other Sections cannot but redound to the honor and glory of God, who made our bodies to be living temples of the Holy Ghost, and says, "if any man defile the temple of God, them shall God destroy, for the temple of God is holy, which temple ye are." The destruction from defilement is automatic because the laws of nature make it so, just as water drowns, cold freezes and fire burns. If there were less physiological sinning I think there would be less sin of all other kinds.

I herewith append two tables of cases treated more or less by food. Table 1, of consumption of the lungs; table 2, of *cases of tumor and so-called cancer.*

All of these cases were more or less closely on a beef diet, *i. e.*, beef steak, roast beef, chopped beef. Not all of them were under the absolute diet.

I may be permitted to give the following conclusions:

1. The graver a case of chronic disease, the better has it done on a diet of beef chopped and broiled as per directions appended.

2. This has occurred so often that I am forced by the sheer logic of facts to aim to use beef as much as possible.

3. I consider the idea of uræmia and the formation of stone in the pelvis of kidneys by the absolute beef diet a bug-a-boo; some and many of my cases I examine the urine of daily; I have never seen uræmia occur from a diet of beef alone and I have seen restored to health cases of full-fledged Bright's disease sent me by other physicians by the absolute beef diet covering a period of six or more months.

4. The same may be said of chronic rheumatism; it is not right to lay upon beef the sins produced by eating foods that undergo alcoholic and vinegary fermentation.

5. So long as I test the condition of my patients by morphological examinations of blood, sputum (if any), feces, urine, and the chemistry of the urine, and feed beef or other foods alone, or in any combination desired according as these methods of inspection and analysis reveal the status of the patient to be, I consider that I am not erring in my therapeutics.

6. But if I base my food therapy upon the opinions of manufacturers, pharmacists and clinicians who do not use the tests noted under 5, I consider that I am much more liable to mistake.

7. Those cases *needing an absolute diet of beef* will do better if fed on beef of animals about four years old, not over-driven before death and fatted on good food; take from the top of the middle of the round meat of such; cut into cubes of small pieces; run through the Enterprise chopper three times, each time cleaning from the plate at the distal end of the machine the white fibrous tissue; the meat should not be handled direct but with wooden spoon; should be moulded in cakes about one inch thick, and as many inches in diameter as needed; broil over or under bed of good live coals; charcoal best; gas good; kerosene stove may be used; the perforated broiler now in use will be found especially convenient. Season with pepper, salt, butter as desired; such beef when rightly prepared is exceedingly palatable; the cake presents outside a dark brown color and inside reddish but not raw appearance. Patients who have lived steadily on this beef, and thus prepared, have preferred it to turkey, chicken and other meats: such is simple history. Any one who will not take the care to buy good beef, and see that it is rightly prepared, must not condemn it as a form of food.

ONE HUNDRED CASES OF CONSUMPTION OF THE LUNGS TREATED IN GENERAL PRACTICE, MANY OF THEM TWENTY YEARS AGO. NOT COMPRISING CASES IN LATE YEARS, WITH FEW EXCEPTIONS.

SERIES I.—NON-ARRESTS—TWENTY-ONE CASES.

A.—*Cases that were not improved—nine in number.*

1. *Illustrative.*—(See Transactions American Medical Association, 1880, pp. 333-408, case 7). August 28, 1877. M. H. S., fisherman, Lanesville, Cape Ann, Mass., aged 33 years. Father died of phthisis. Mother living; been sick two months. He states that he took cold, and then went fishing. Was exposed, and took more cold; except two attacks of typhoid fever, was perfectly well before. General appearance bad; cough is constant and severe; no hæmoptyses; no dyspnœa except on going up stairs; severe pain in shoulders; appetite poor; bowels regular. Has lost flesh and strength; night sweats copious; pulse weak; hands shake badly.

Physical Signs.—Dullness on percussion and crackling over right upper third front and lower third back; feeble inspiration, almost flat on percussion; no crackling, but the respiratory murmur was heard

underneath. Inspection of the blood revealed spores and spore collect in abundance. Fibrin filaments thickened. Red corpuscles adhesive, sticky, irregularly massed; pale in color. Mr. S. went upon treatment with quinine for medicine. It was his intention to come up from the Cape again, but he was unable to do so, and despite the means used, he died not long after.

Remarks.—At the time it did not seem to the writer that the case was hopeless. Still, his history teaches that one must not trust too much to first appearances. It is a disadvantage to see a patient only once. It was reported that he faithfully used the diet. It is well, however, to compare the case with some of the very sick ones that were cured as noted in series 3. The lesson taught is, simply, the physician should never refuse to take a case, and should not be too free with promises of recovery.

No. Date. Sex. Publications.	Condition when Placed on Treatment.	Remarks.
2. Man, middle-aged. Case 2, loc. cit.	Father of Case 43; not so much disease as in son . .	Death in a few weeks.
3. Woman, 35. Case 4, loc. cit. .	Advanced disease; three years' standing	Digestion improved; diet relished, but of no avail; died in a few weeks.
4. 1873. Boy, 19. Case 8, loc. cit. .	Acute tuberculosis and peritonitis. Blood morphology of tuberculosis	Treatment of no avail; diagnosis confirmed by post-mortem.
5. 1873. Woman, 55. Case 15, loc. cit.	Aphonia; larynx infiltrated and inflamed; vocal cords swollen, ash colored and stiff; tuberculous blood morphology; chest emaciated, flattened; coarse and fine rales and cavernous respiration at apices.	Symptoms relieved; death in nine months.
6. 1889, girl, 22. Unpublished . .	Tuberculous blood; crackling through right lung, front and back, and upper third left lung; asthma; diarrhœa; night sweats; copious expectoration; lung fibre in sputum . . .	Slight amelioration of symptoms. Death in two months.
7. 1887. Man, 22. Unpublished . .	Tuberculous blood; much disease in lungs	Plans followed out faithfully. Death.
8. 1886. Girl. Unpublished	Tuberculous blood	Treatment carried out faithfully. Of no avail.
9. Woman. Unpublished . . .	Tuberculous blood; cavity in apex of each lung . . .	Had uterine disease which she would not have treated; retarded case; death .

Cases that were on partial diet; had bad surroundings, financial, climatic, etc.—twelve in number.

10. *Illustrative.*—(See Case 1. loc. cit.).—Widow, aged 43 years; small sized, thin, anxious and nervous. Asthmatic complication; old abscesses of the mediastinum; diarrhœa; dyspepsia; sleeplessness; severe cough; dullness on percussion, with constant crepitant rales over both upper thirds front. Great dyspnœa at times. Abnormal valvular sounds of the heart. No albumen in urine. Altogether the most distressed and suffering case of consumption I had seen for some time. The effect of the animal diet, bath of mineral acids, and quinine, was to relieve, in a measure, the night sweats and abdominal pains. But the appetite turned against the animal food, and it would often be rejected by vomiting. She was obliged then to carry out the regime only partially, particularly as she laid all her bad feelings, distresses and sickness to her food or medicine, and never to her disease. She suffered also greatly from prolapsus of the uterus, aggravated by the severe coughing. This case was not relieved by the special treatment recommenced. The weakness of mind and body, induced by the presence of organic disease in the thoracic and abdominal viscera, was too great to be reached by perhaps any treatment. Indeed, just here it may be stated that no pretension is made toward cure of any but one-third of the cases; but to insure that proportion it is necessary to have the treatment strictly carried out.

The present case was one in which there was really no hope, and only adopted as "a drowning man catches at a straw." It is thought best here to give simply the bad and good cases together, and let the reader judge for himself of the value of the data thus derived.

No. Date. Sex. Age. Publication.	Condition when Placed on Treatment.	Remarks.
11. 1879. Dr.—, 72. Case 3, loc. cit. .	Tuberculosis, as diagnosticated by Dr. H. I. Bowditch	Partial treatment; was improved; death in three months.
12. Man, 40. Case 5, loc. cit.	Grave general symptoms. Local disease in lungs not so well marked	Followed up treatment feebly; death in few months.
13. Woman. Case 6, loc. cit	Advanced tuberculosis of both lungs; great weakness, prostration and impaired morale	Followed up treatment faintly; died in a few weeks.
14. 1887. Woman, 34. Case 9, loc. cit.	Acute tuberculosis in the puerperal state; hæmoptyses before and after labor; disease in upper third right lung; blood morphology tuberculous; patient poor, and house damp and dark	Died in two weeks. Life perhaps might have been saved if there had been a sanitarium to treat her case in.
15. April, 1877. Irish girl, 17. Case 10, loc. cit.	Undersized, pale, thin, feeble, downcast; cough; copious expectoration; loss of flesh and strength; blood tuberculous; diet had been mainly flour, potatoes and tea	Did not follow up treatment closely; was improved, but died in October, 1877.
16. 1877. Dr. —, 37. Case 11, loc. cit.	Tuberculous blood; disease right upper third front and back; throat inflamed throughout	Throat treated with solution liq. per sulphate iron and glycerine, equal parts. Lived on New England rum and cream; some improvement and then gradual increase of disease, and death in three months. The blood was not improved by this dietary.
17. 1873. Woman. Case 12, loc. cit.	Early stages of disease; throat inflamed	Had bad surroundings as to finances, and did not follow out treatment; retrograded and died.
18. 1874. Girl; daughter case 17. Loc. cit., case 13.	Tuberculous blood; disease started in lungs	Not seen again; ordered on diet which was not followed out. Death in six months.
19. 1876. Irish woman. Case 14, loc. cit.	Tuberculous blood; disease in right lung	Treatment not followed out. Death.
20. 1875. Man. Case 16, loc. cit.	Marble-worker; vocal cords thickened and ulcerated; arytenoid cartilages enlarged; blood tubercular; disease at apices of both lungs	On strict diet for a month; wife sick in bed. Becoming discouraged, gave up treatment altogether. Died.
21. 1874. Woman, middle-aged. Case 17, loc. cit. .	Been called consumptive for years; farmer's wife and a hard worker. Advanced tuberculosis; blood tubercular	Partial diet; great deal of medicine. Perhaps would have been saved if treated earlier.

SERIES II.—PARTIAL ARRESTS—THIRTY-NINE CASES.

A.—*Cases that followed the treatment faithfully—nineteen.*

22. *Illustrative.*—(See No. 21, loc. cit.) Mr. W., aged 60, in 1874 had been consumptive for two years. His occupation was that of an overseer of an umber paint mill. He had, with a cough, marks of increasing debility, as loss of flesh, animation and courage. There was marked dullness on percussion, crepitant and sonorous rales over the upper part of both lungs. The blood also presented fibrin filaments and spores. It is some years since he has lived upon animal food diet; his wife has faithfully prepared the choicest meats for him, and what is more, has encouraged him in pursuing the uncommon diet. The case was rather unpromising at first, owing to its long standing and extent of tubercle infiltration. He is, however (1876), comparatively well. Cough is hardly perceptible. The physical signs are still to be detected, but with less marked characteristics. He attends to his business as usual. Says he expected to die, in which expectation the community shared. The blood shows great diminution in the foreign admixtures. 1879, still living, but very feeble. In October he died.

No. Date. Sex. Age. Publication.	Condition when Placed on Treatment.	Remarks.
23. Man. Case 18, loc. cit.	Severe pulmonary hæmorrhage; dullness on percussion and crackling over left upper third front; emaciation; cough and night sweats.	Would not take cod liver oil, then, as now, a standard remedy; ate pound and a half of butter a day; restored to duties, and lived 12 years; death from profuse hæmorrhage; post-mortem showed lung healed—three cavities—on right side and some new disease in the left luug.
24. Woman, 24. Case 20, loc. cit. .	Primipara; disease right upper third front; after labor, suffered with prolapsed ovary, which caused much reflex pain; blood tuberculous	Treatment of pelvic disease successful. Restored to health. Lost sight of.
25. 1876. Man, 27. Case 22, loc. cit. .	Chest flattened; coughs all night; sweats; debility; dyspepsia, enteralgia and gastralgia; insomnia; gone to bed to die	Strict diet and no medicines; stopped cough in three days. Improved and returned to work as plumber; was drenched by water from a burst pipe; contracted pneumonia; was placed again on strict diet, but never recovered from shock. Death.
26. 1877. Man, 65. Case 25, loc. cit. .	Cough; expectoration; loss of flesh and strength; abnormal heart sounds; night sweats; dullness on percussion, expiratory crackling, left upper third front; tuberculous blood. .	Strict diet; returned to business in a year. Died in 1878 with cardiac symptoms.

No. Date. Sex. Age. Publication.	Condition when Placed on Treatment.	Remarks.
27. 1876. Man, 30, Case 28, loc. cit..	Tuberculous blood; distorted chest; severe cough; profuse hemoptyses; disease in both lungs; weight 65 pounds	Gained 20 pounds in four weeks; followed diet more or less closely for a year; disease arrested for a time; a man of great courage, and should have been treated earlier and saved.
28. 1877. Girl, 17. Case 30, loc. cit..	Throat inflamed; chest thin; case as to blood and lungs between pre-tuberculosis and tuberculosis. Splenic enlargement . . .	Local treatment to throat; milk diet. Do not know final result. Case was improved.
29. 1877. Man, 33. Case 34, loc. cit..	Laryngeal inflammation; cardiac hypertrophy; tubercular blood; disease left lung; dyspnœa; prognosis doubtful	Local treatment for throat; milk diet; later, some leeway as to food. Case reported well, 1879.
30. 1877. Irishman. Case 35, loc. cit.	Disease upper part of both lungs; tuberculous blood. One month later, left upper third, tympanitic percussion, metallic tinkling, splashing on succussion; lower thirds flat; respiratory murmur absent . . .	On strict diet; did not expect him to recover from pneumothorax, but lung healed over and man died several years later of other trouble.
31. Young lady. 1873. Case 36, loc. cit.	Disease in both lungs; left lower third almost hepatized; blood tuberculous.	Improved while at home and on strict diet; visited, ate wrongly; disease lighted up again. Died in 1875.
32. 1874. brother case 31. Case 37, loc. cit.	Been sick four years; lived out of doors; depressed in mind, as he was not earning money	Case improved; was able to work as a clerk in a harbor steamer. Died 1880.
33. 1876. Man. Case 38, loc. cit.	Violent hemoptyses. Disease in both lungs. Not afraid to die.	Took cod liver oil besides the general plan here laid own. Jan., 1877. Blood and lungs much better. Living in Tennessee, October, 1879.
34. French woman; middle-aged. Case 39, loc. cit.	Disease right upper. Tuberculous blood	Strict diet, closely followed. Well at last accounts.
35. 1874. Woman, 24. Case 40, loc. cit.	Dyspnœa; hypertrophy of heart; diseased apices of both lungs; had given up school teaching to die; tubercular blood	Adhered closely to diet. Local treatment for throat. Was able to return to her teaching; overworked; disease returned; profuse hemoptyses; death.
36. 1874. Man, 21. Case 42, loc. cit.	Marked diseased apices of both lungs; an unpromising case	Improved and went to California; died there.
37. 1877. Woman, 36. Case 43, loc. cit.	Blood tuberculous; laryngitis; uterus anteverted; disease left upper third front.	Unlike majority of cases, did not treat uterus; case improved, but finally retrograded and died.
38. 1886. Woman, 24. Case unpublished.	Disease in both lungs . . .	Arrested for two years; died March, 1889.
39. 1887. Man, 24. Unpublished . .	Disease in both lungs, as diagnosticated by his physician. Not seen by us . .	Improvement, and disease arrested for two years.
40. Man	Considerable disease . . .	Arrested temporarily.

SERIES II.—PARTIAL ARRESTS—CONTINUED.

B.—*Cases that did not follow the treatment faithfully—nine.*

41. *Illustrative.*—(See Case 23, loc. cit.). Miss C., aged 22, residence Cape Cod. Seen July, 1875. Amenorrhœa; cardiac trouble; dullness on percussion in upper part of both lungs; expiratory rales in same location. Blood was full of evidence of disease, as shown by the enlarged white corpuscles, the spores and fibrin filaments; she had been under the hypophosphites of lime and soda. She was put upon the strict diet and mineral acid baths, and was removed to New Hampshire. She was thin in flesh, and unable to walk an eighth of a mile from prostration under the necessary effort. For the next three months was not herself thoroughly convinced of the utility of the measures now proposed; still, her friends were, and by means of their influence, she adhered closely to diet and baths. Immediately there was an improvement in the cough, in flesh and strength, which continued. She walked two miles readily. Returned home for a visit in November. Here the diet was abandoned, ate everything she liked, and took medicines. Remained at home four weeks. She ran rapidly down, lingering till she felt "she could not live two days." Returning to New Hampshire, she improved but little; remained there till April, 1876, when, being very much worse, she returned home to die; died in 1878. This case shows the power of the system to resist the disease, even when not following up the treatment; this resistance ought to be more relied on.

No. Date. Sex. Age. Publication.	Condition when Placed on Treatment.	Remarks.
42. Woman, 30. Case 19, loc. cit.	Between pretuberculosis and tuberculosis.	Attention dismissed early, and case died in six months.
43. 1874. Youth, 21. Case 24, loc. cit.	Advanced tuberculosis; diet had been mainly flour	Great improvement under strict animal diet. Returned to work. Resumed former diet; died in 1876.
44. Man, 50. Case 26, loc. cit. . . .	Left upper third chest, cavernous respirations and amphoric tinkling; elsewhere crackling and diminished respiration . . .	Rigid diet. Much improved. Appetite returned, and ate anything desired; death.
45. 1875. Man, 43. Case 31, loc. cit.	Malaria and abdominal tumor, 1860; cured; 1875, worked too hard, and lung and throat trouble came on	Improved while on treatment; not encouraged by wife; gave it up and died, 1876.
46. Woman, 29. Case 32, loc. cit.	Pretuberculosis. Under mental strain and grief; ran into tuberculosis . . .	Was improved while under close observation and followed treatment; finally said she would eat what she pleased; did so, and died.
47. 1877. Woman, 34. Case 33, loc. cit.	Asthmatic. Disease in right lung. Arytenoid cartilages inflamed	Disease arrested. Went from observation and gave up treatment.
48. 1880. Man, 54. Unpublished. .	Heart enlarged. Angina pectoris. 1886, lungs becoming affected with great deal of disease	1880, heart reduced to normal size by diet. Would not follow diet, when lungs became affected, and died, 1889.
49. 1887. Woman, 46. Unpublished.	Disease in both lungs. Asthmatic. Heart enlarged . .	Improved while following treatment closely; but could not control appetite, and would steal food; died 1889.

SERIES II.—PARTIAL ARRESTS—CONCLUDED.

C.—*Cases that had bad surroundings; that died of pneumonia, etc.—eleven.*

It may be said that we were not very successful in our treatment of pneumonia complicated with tuberculosis. The complication is a grave one, and is usually the result of carelessness; still, many recover. We have seen cases of tuberculosis under treatment who had gotten the blood in good condition, and on contracting pneumonia, almost always pull through; one difficulty is in not treating the cases early enough, *i. e.*, not arresting the congestion. But if the blood is full of emboli of yeast and fibrin filaments, and massed corpuscles, there is a great plenty of quick work to be done to relieve the engorged lung and help the heart. Each case needs its own treatment. Pneumonitis in those called well is a more fatal disease than it ought to be, as the laity have been educated into such a dread of it, that when pneumonia is pronounced, they are apt to give up all hope. Antipyrin and the newspapers killed many of the cases that died during the late epidemics.

50. *Illustrative.*—(See Case 27, loc. cit.). In October, 1874, Mrs. ——, a woman with a very young child, that especially cried by night and kept its mother awake, was very pale and thin, coughing severely and raising largely. There was diminished resonance on percussion and crackling throughout the upper third of right lung. She adopted the diet and acid baths. In four months the cough was very slight. The physical signs diminished. Her softened lung tissue dried up. The appearance improved so much that a casual observer would have called her well. All the time she suckled her infant. Owing to the hard times, she was obliged to relinquish her diet, and would not accept it as a gift. Immediately she began to fail, and died in the course of six months. The improvement in health kept pace exactly with the imposed diet. When she ate bread, the cough returned; the expectoration was copious. The night sweats reappeared. This shows markedly the relation of animal food to consumption. It is well worth knowing, for if these things "are done in the green tree, what may be done in the dry?"

No. Date. Sex. Age. Publication.	Condition when Placed on Treatment.	Remarks.
51. 1876. Woman, 33. Case 19, loc. cit.	Lived in a damp, musty house. Caught severe cold. Disease upper third front. Tubercular blood. Throat much inflamed . .	Improved. Passed from under my care. Disease returned. Treated by homœopathy. Death.
52. 1876. Woman, middle-aged. Case 41, loc. cit.	Disease left lung; cough; expectoration; hæmoptyses	Did well while senior writer supplied her with beef. On his moving away from that town, supply ceased. Case died.
53. 1882. Man, 24. Unpublished . .	Small cavities in both lungs; disease arrested for two years	Died of pneumonia.
54. 1883. Man, 26. Unpublished . .	Cavity in right lung	Disease arrested for a year. Cough stopped. Died of pneumonia caused by exposure in a rain storm.
55. 1887. Man, 64. Unpublished . .	Disease upper third left lung	Improved. Died of pneumonia.
56. 1887. Girl, 22. Unpublished . .	Cavity left lung	Arrested for a year. Disgraced socially by a certain crime committed. Disease resumed its sway; death.

No. Date. Sex. Age. Publication.	Condition when Placed on Treatment.	Remarks.
57. 1887. Man, 50. Unpublished . .	Disease in both lungs . . .	Arrested for a year. Died of pneumonia; family refused the services of a trained nurse.
58. 1887. Man. Unpublished . .	Disease in both lungs . . .	Arrested. Death from pneumonia.
59. Man. 1887. Unpublished . .	Considerable disease . . .	Arrested for two years. Died of pneumonia.
60. Man. Unpublished	Disease right lung	Arrested for one year. Died of pneumonia.

SERIES III.—ARRESTS MORE PERMANENT IN CHARACTER, AND MIGHT BE TERMED CURE IF OCCURRING IN OTHER DISEASES.—FORTY CASES.

61. *Illustrative Case.*—(See Case No. 53, loc. cit.) Mrs. W., Cleveland, Ohio, June 21, 1877. Present condition: Suckling a four months' child. Active and doing her own housework. Looks like a person in ordinary health. Coughs occasionally. No sputa. A good-sized, rather flat-chested woman, thirty-five years of age. *Chest*—Dullness on percussion and cavernous respiration over left upper third back. Dullness over the whole left back; elsewhere normal. *Blood*—Inspection showed normal looking blood. Red corpuscles not massed; are distinct, well defined, rouleauxed, no fibrin or mycelial filaments; white corpuscles not enlarged.

This report is more interesting when taken in connection with the following history: In February, 1865, Mrs. W. had been sick in bed four months with the last stages of consumption. She was emaciated to a skeleton; weight, 60 pounds; usual weight, one hundred and thirty pounds. Her physicians, who were regularly educated and skillful men, pronounced her left lung gone—that is, riddled with tubercle that had softened and broken down in such a manner that the pulmonary substance was removed; had become useless, and of course they gave a decidedly fatal prognosis. There was at this time a great caving in or flattening of the antero-posterior diameter of the chest, due to atmospheric pressure conjoined with loss of lung substance. The patient's mother caused the treatment to be faithfully and assiduously followed out. Improvement slowly followed. In four months' time she was able to be out of doors and visit the city. After a time, she resumed her profession as school teacher, and taught successfully for four years. Five years ago she married, and has borne three children, all healthy and vigorous. She likes her meat diet best; lives on it, and works hard. The physical signs adduced show the marks of the ruin wrought in her lung, and also show the tremendous power of food in managing or in affecting the course of organic pulmonary disease, even in its third and hopeless stage. This history reads like fiction. November, 1888, we heard from her that she had continued in good health. A beef-eater.

62. *Illustrative.*—(Unpublished). 1882; young man. Cavities in both lungs; heart enlarged; emaciated as badly as preceding case; profuse hæmoptyses; elastic and inelastic lung fibers in sputa; blood tubercular; was treated very carefully on these plans. Was cured—*i. e.*, his cough ceased; the lungs healed; the heart regained its normal size; he took on flesh and strength; went through Yale college; was graduated with honors. Is well, and was seen by us in May, 1890.

No. Date. Sex. Age. Publication.	Condition when Placed on Treatment.	Remarks.
63. Woman, 20. 1865. Case 44, loc.	Cough, expectoration; wasting of flesh; loss of appetite; dullness on percussion and crackling right upper third front. Predisposed to tuberculosis	Animal food diet repulsive, but she was encouraged by her relatives. Was cured, and remains so, 1878; thirteen years.
64. Man. Dec., 1862. Case 45, loc. cit.	Diagnosis, double pleurisy and tubercle, so made by the late Dr. Benj. Cutter. Medication did little if any good	Was ordered to have killed a fat hog which he owned, and to eat it. This was done; man seen again 1878; then alive and well; 1893, died of drunkenness.
65. Girl, 16. 1878. Case 46, loc. cit.	Sister dead of tubercle. Blood tubercular; disease right upper third front . .	Placed on rigid diet; was cured, and remained so, 1880.
66. Woman, 1872. Case 47, loc. cit..	Cough, emaciation, copious expectoration; dullness on percussion and expiratory crackling well marked over left upper third. .	Followed treatment faithfully, and was rewarded by restoration to health. .
67. Girl, 24. 1875. Case 48, loc. cit..	Right upper third front and back dullness on percussion; crepitant rales and tubular respiration. Tuberculous blood. Diagnosis of tubercle given by late Dr. William F. Stevens, of Stoneham, Mass. .	Lung healed by diet. Has been troubled by a uterine fibroid and pelvic abscess, but pulmonary disease in abeyance.
68. Man. 1873. Case 49, loc. cit..	Copious hæmoptyses; lung breaking down	Heart's action controlled with veratrum; alcohol to outside of chest; rest; strict diet. Cure.
69. Woman, 1873. Case 50, loc. cit..	Hard-working woman. Emaciation; cough; disease upper part right lung; blood tuberculous	1877, in quite good condition; 1889, Aug., no cough; dry rales right lung; has to work hard; troubled with uterine disease.
70. Woman, 34. 1877. Case 51, loc. cit.	1866, Dr. Buzzel, of N. Y., sent her to Wales to recover from hæmoptysis, cough and copious expectoration by diet of mutton, milk, and mountain air	Results desired in 1866 achieved; 1877, blood pretubereular; was run down. Placed on diet and cured. Seen 1890; well.
71. German, 32. 1877. Case 52, loc. cit.	Disease right lung; abject feebleness; no appetite; feared tubercle; night sweats	Gallon of milk a day. Case made rapid progress to health.
72. Girl, 18. 1877. Case 54, loc. cit.	Disease lower part of left lung; blood tuberculous. .	Was dieted faithfully and was cured.
73. Irishman. 1876. Case 55, loc. cit..	Tubercle diagnosticated by other physicians, upper thirds both lungs. Blood tuberculous	Was cured.
74. Girl, 16. 1875. Case 56, loc. cit..	Sister dead of tubercle. Disease upper portion left lung	Partial diet, on which she recovered.
75. Woman, 38. 1877. Case 57, loc. cit.	Blood tuberculous; throat inflamed; pharynx inflamed; cough; some expectoration	Was pulled out of her condition, and is living, 1890.
76. Woman, 1873. Case 58, loc. cit..	Disease upper part of left lung	Restored to health by partial diet. Treated for uterine disease, 1874: well, 1880.
77. Man, 50. 1874. Case 59, loc. cit..	Disease left upper third front	Strict diet. Cured of tubercle and asthma. Remains so, 1880.
78. Irish boy, 17. Case 60, loc. cit..	Tuberculous blood. Acute tuberculosis right upper third front	Diet followed out faithfully. Cure.
79. Woman, 34. 1871. Case 61, loc. cit.	Chronic cough; free expectoration; disease not well marked as yet in lungs. Blood tuberculous	Remained well under treatment till 1888, and return of trouble; was again dieted, with success.
80. Girl, 20. 1878. Case 62, loc. cit..	Chronic cough; free expectoration; night sweats; pallor; weakness; chest first stages of disease; blood tuberculous	Cured and remained so, 1880.
81. Woman, 1871. Case 63, loc. cit..	Blood tuberculous. Disease right upper third, front; cough; severe hæmoptysis; family consumptive; pharynx inflamed, especially patch on posterior pillar palate.	Health restored, 1877. Copious hæmoptysis after excitement; heart laboring too much, 1878; uterine disease; restored blood to its tubercular condition; treated energetically and remains well, 1880.
82. Girl. 1875. Case 64, loc. cit..	Severe hæmoptysis; cough; lungs not much diseased; heart enlarged; blood tuberculous and syphilitic.	Cure.
83. Woman, 35. 1881. Unpublished	Cavity upper part left lung.	Was cured positively, and died of pneumonia, 1885.
84. Girl, 20. 1886. Unpublished . .	Hæmoptysis; lung fibres in sputum; blood tuberculous	Cured and remains so, 1890.
85. Woman, 50 1887. Unpublished	Disease base right lung; breath fetid; heart enlarged	Is called a trophy, but may yet go under in her slavish attention to household duties. 1893, well.
86. Woman. 1881. Unpublished . .	Crackling and cavernous respiration upper third right lung; inelastic fiber in sputum; retroversion uterus	Cured. Wore Cutter Stem Pessary. Died in 1889 of typhoid fever; lung remained healed.
87. Woman, 48. Unpublished . .	Lung fibres in sputum; gravel of lungs; asthma; tuberculous blood; albumen, fatty epithelia and casts in urine; small fibroid tumor of womb; anteversion and anteflexion.	A tough case; cured of renal and pulmonary troubles; tumor disappeared under diet. Wore Cutter Stem Pessary to California via Isthmus of Panama. Comparatively well as a valetudinarian, 1892.
88. Woman, 38. 1885. Unpublished	Disease in both lungs. Uterine disease	Cured of lung lesion, and fairly well. 1892.
89. Girl, 20. 1885. Unpublished . .	Disease upper third left lung; lung fibers in sputum. Uterine disease . .	Cured; remains so, 1889.
90. Man, 40. 1882. Unpublished . .	Cavities in both lungs; profuse hæmoptyses; night sweats. Said to be absolutely incurable	Cured, and remained so for two years. Have lost track of him.

No. Date. Sex. Age. Publication.	Condition when Placed on Treatment.	Remarks.
91. Man, 60. Jan., 1889. Unpublished	Disease in both lungs	Promptly arrested, and patient satisfied after three months of treatment.
92. Woman, 26. 1877. Va. Med. Monthly, Dec., 1888, and Sept., 1889	Disease through middle of left lung and at apex; uterine disease; hæmopsyses; lung fibres in sputum	Disease arrested, and patient died, Aug., 1889, from the results of a meningitis and bowel lesion of fibroid thickening.

93. B.—*Pretubercular cases treated that may come under this head.*

Illustrative Case.—(See case 65, loc. cit.). In April, 1876, a young man, eighteen and one-half years old, complained of feeling weak and listless. He had nocturnal and morning cough, with slight expectoration. He was pale and thin, and losing flesh. Consumption was hereditary on both sides of the family. There were no physical signs of pulmonic lesion. Inspection of the blood microscopically disclosed abundant signs of mischief, such as: Fibrin filaments were marked in character; spores and spore collections; mycelial filament; white corpuscles much enlarged, and too flabby, pale, sticky, outlines not clearly cut, aggregated. These, taken together with the history and the rational signs, induced a diagnosis of the pretubercular stage. Under the use of acid baths and strict diet, the sanguineous and other signs began to disappear, so that in a year he was enabled to proceed to Germany and study music. He has been a beef-eater; *i. e.*, eats more of it than people usually do. Alive and well, 1893.

No. Date. Sex. Age. Publication.	Condition when Placed on Treatment.	Remarks.
94. Physician, 45. 1877. Case 66, loc. cit.	Takes cold easily; ulcerated sore throat; weak and debilitated; loss of flesh; slight diminished resonance on percussion; diminished respiratory murmur, strong expiratory murmur, upper right front; blood tuberculous.	Diet, but not very faithfully. In 1880, well.
95. Man, 24. 1876. Case 67, loc. cit.	Father dead of tubercle, and sister dying. He had lost flesh and strength. No voice; pale and anæmic; no lung lesion; blood pretubercular	Treatment resulted in removal of blood morphology of disease. Is well.
96. Woman, 24. 1877. Case 68, loc. cit.	Phthisis hereditary; enlarged lymphatic glands; uterine disease; diminished respiratory murmur throughout the right lung; pretubercular blood	Milk diet; blood became normal; glands nearly disappeared.
97. Woman, 30. 1877. Case 69, loc. cit	Small fibroid tumor of womb; menorrhagia; blood pretubercular	Blood restored to health, and tumor disappeared under diet influences.
98. Girl, 21. 1877. Case 70, loc. cit.	Feeble respiration right lung; blood pretubercular; debility; cough; uterine disease	Pyrophosphate of iron; strict diet; rest; entire recovery.
99. Woman, 25. June, 1888. Va Med. Monthly, Dec., 1888	Mother and brother dead of tuberculosis. Weight, 248. Red corpuscles pale in color and sticky. White corpuscles enlarged with spores of vinegar yeast. Spore collects in serum spaces. Also crystals of cystine	Fatty heart; dieted for six months; weight 150 lbs.; calls herself well, 1892.
100. Man, 60. 1878. Unpublished	Heavy cough. Brother dead of tuberculosis. Corpuscles massed. Yeast and fibrin filaments present.	Dieted and cured. Lived in Japan several years. Well, March, 1890. Diet principally beef and bread. Lives in the South in winter; is a hard worker in his profession. At work in Europe, 1892.

TABLE II.—CASES OF TUMOR AND CANCER—SO-CALLED.

Cases 1-13—Tumor.

No. Date. Sex. Publication.	Condition when Placed on Treatment.	Result.
1. 1873. Woman. Am. Jour. Obs., Oct., 1877, and Med. Bulletin, August, 1891	Hard, large abdominal fibroid, several years' growth; severe metrorrhagias; exhaustion; health reduced; about to apply galvanism.	Placed on diet largely animal food as preparation for galvanism; tumor reduced one-third, and no operation done; living, 1888.
2. 1875. Woman, 44; Loc. cit.; also A. J. Obs., p. 304, April, 1887	Unmarried; multi-lobar fibro-myoid; abdominal and pelvic; uterus retroflexed; strict diet for nine months; one application galvanism by abdominal and rectal puncture.	Growth arrested and partial reduction by diet; in good health 1892, alive, but few traces of disease.
3. 1875. Woman, 48. Loc. cit.	Several abdominal lobes; sessile intra-uterine growth; alarming copious hæmorrhage	Strict animal food diet; growths reduced and health restored; 1890, alive and quite well.
4. 1877. Woman, 30. Loc. cit.	Four children, mother of; uterine growth posterior wall	Tumor disappeared under strict diet. Well 1333.
5. 1875. Woman. Loc. cit	Unmarried; aged 28; central, round, dense, unyielding tumor extending from umbilicus downward	Tumor reduced to a mere nodule by nine months on strict animal food dieting.
6. 1874. Woman. Loc. cit.	Chain of six tumors traversing abdomen; largest three inches in diameter; pregnancy	Strict diet for lung lesion; child born alive; woman's health improved; too much attention to household and church-fair duties killed her.
7. 1876. Woman, 34. Loc. cit.	Married; childless; abdominal and pelvic multi-lobar tumor; also fibro-cystic disease	Disease reduced by diet; woman quite well, 1890.
8. 1882. Man, 60. Med. Register, April 2 and 9, 1887	Fibroid disease of stomach, complicated with enlarged liver	Nourishment per rectum till beef preparation could be taken by mouth; cure; alive, 1892.
9. 1883. Woman. See Medical Bulletin, Aug., 1891	Unmarried, aged 40; tumor at fundus uteri 3 inches in diameter; double inguinal hernia	Wore truss for hernia; tumor disappeared under diet; wore Cutter stem pessary; well, 1892.
10. 1886. Woman. Loc. cit. Drs. E. & J. A. Cutter	Unmarried; aged 35; immense abdominal fibroid; kept in abeyance by diet so that could do literary work	Two applications galvanism reduced growth.
11. Man, 1889. Loc. cit. Drs. E. & J. A. Cutter	Aged eighteen; father dead of scrofula and alcoholism; blood tuberculous and syphilitic; large tumor left side of neck, and small growths right side	Strict animal food diet; succus alterans and biniodide of mercury; gain in weight, thirty-five pounds in six months' time; tumors degenerated; hardly any signs of disease, 1893.
12. 1883. Woman Loc. cit	Unmarried, 40; tumor, Douglas' cul-de-sac	Kept in abeyance several years by diet; patient professional philanthropist, and killed herself by overwork.

Cases of Pseudo-Cancer—13, 14 and 15.

No. Date. Sex. Publication.	Condition when Placed on Treatment.	Results.
13. 1889. Woman. Loc. cit. Drs. E. & J. A. Cutter	Married, aged 40; four children; tumor right breast, two inches diameter, very painful; uterine hyperæsthesia; growth called cancer by family physician	Diagnosis, fibroid; diet, two-thirds animal and one-third vegetable food; mild tonics; uterine hyperæsthesia relieved by iodoform per capsule and vector; tumor disappeared in six months; no return, 1893.
14. 1889. Woman. Loc. cit	Tumor of breast, called cancer by six dozen cancer specialists; much pain in growth; had been on milk diet, which had done her some good; great uterine hyperæsthesia	Diagnosis of fibroid; pain reflex of womb; patient disappeared from observation.
15. 1890. Woman. Unpublished. Drs. E. & J. A. Cutter	Aged fifty; professional philanthropist; growth right breast three inches in diameter and one inch thick; called cancer by eminent surgeons of Boston, who advised immediate extirpation; no involvement of axilla	Mutilation of breast strongly opposed; advised to do less for humanity and more for herself; two-thirds animal and one-third vegetable diet; growth entirely disappeared, 1893.

Cases, in author's possession, called Cancer, and treated as such; some cases may have been pseudo-cancer; if so, the result is the same, for if the dictum of surgeons had prevailed in Case 15, there might have resulted an open sore, with, in the end, cancerous degeneration. For greater explication of this subject, see "Diet in Tumor and Cancer," reprinted from Medical Bulletin of July, August and September, 1891.

No. Date. Sex. Publication.	Condition when Placed on Treatment.	Result.
16. The late Dr. Amos Twitchell, of Keene, N. H. See Memoir prepared by H. I. Bowditch. Diet	Growth called malignant by eminent men in Amer. Med. Assoc., 1847; removed by scalpel; recurrence; treated by local applications	Disease removed by exclusive diet of milk, cream and bread.

No. Date. Sex. Publication.	Condition when Placed on Treatment.	Results.
in Cancer, Alb. Med. Annals, July and Aug., 1887, and Med. Bull., Aug. and Sept., 1891		
17. Loc. cit. Man.	Case of Dr. Twitchell called osteo-sarcoma of scapula, six inches in diameter; Dr. Twitchell had removed in a similar case arm, scapula and clavicle, case dying year or two after of carcinoma internal organ.	Dr. Twitchell advised his second case to eat nothing but bread and drink an infusion of water-dock; case did so, with result of disappearance of growth in two years.

Men may cavil against this evidence and say that Dr. Twitchell did not know what cancer is; but the intellect that did the capital operation referred to, and could abstain from many foods, must not be condemned in its judgments. Dr. Twitchell was a great light in New England surgery; do surgeons of the present day make any better diagnosis of cancer? The answer is given in the table of cases of pseudo cancer and of true cancer herein given.

Cases called Cancer treated by the writer alone, or in some, association with his son. The plans used on the line of beef-feeding as preferable to the milk diet.

No. Date. Sex. Publication.	Condition when Placed on Treatment.	Results.
18. 1876. Woman. Alb. Med. Ann., July and Aug., 1877. Med. Bulletin, Phil., Aug. and Sept., 1891. .	Aged forty; niece of case dead of cancer of calvarium, heart and liver; several hard, round tumors back of womb; smaller growths in cervix; unhealthy vaginal discharges, not bloody; countenance cachectic; worried by separation from worthless husband, whom she loved	Diet of beefsteak and other animal food; tea and coffee; gentle tonics and mild laxatives; death of husband; systemic plans of treatment were enforced, with result of disappearance of disease in about a year; no return, 1887.
19. 1876. Woman. Age 50. Loc. cit.	Cervix uteri enlarged laterally, even to side of pelvis; ragged, rough and bleeding; punky to touch; subject to unrelievable domestic mental troubles; taking opium; diagnosis cancer by eminent surgeons	Beef and other animal foods exclusively fed; thrice weekly cervix buried in iodoform; simple tonics; in three months the ulcerative processes had almost entirely disappeared; against my judgment, returned to New Orleans; disregarded injunctions; disease resumed its course, and caused death.
20. 1880. Man. Loc. cit.	Occupation, shoe-cutter; disease existed thirteen months; hand swollen and open on dorsal surface; carpal bones necrosed; under surface of wrist, volcanic-like swelling inch and a half in diameter and one inch high; in axilla several enlarged stony, lymphatic glands, more or less fixed, some having fistulous openings with discharge which presented under microscope such varied and heterologous histological elements that I could not but call it cancer	Attending surgeons' diagnosis, cancer; as consultant, advised amputation at middle third forearm; operation resulted favorably; diet of beefsteak, tea and coffee; patient living in 1892, with disease in axilla quiescent. Is a book agent.
21. 1880. Woman. Age 35. Loc. cit.	Married, aged 35; childless; wife of an advertising physician; case appeared to me to be uterine fibroid cancerously degenerated; great pain in pelvis; profuse bloody discharges; some emaciation	Fed on beef essence made at home; case gained in flesh, strength, color and looks; hæmorrhages ceased; friction arose between husband and self, and case went from under my care; treatment dropped; death.
22. 1880. Woman. Sister preceding case. Loc. cit. .	Mental condition bad, circumstances limited, countenance cachectic; vaginal discharge, not bloody; knobbed enlargements os and cervix uteri	Absolute beef diet; with tea, coffee and milk; disease disappeared; 1891, disease in stomach called cancer by attending physician; disappearance under same plan of treatment.
23. 1889. Woman, 65. Loc. cit. Dr. E. & J. A. Cutter.	Occupation, gentlewoman; small growth in left breast; sessile growth right chest wall above breast and one in right axillary space; uterine hyperæsthesia and anteversion; chronic diarrhœa.	Growths in right axilla and right chest removed with galvano-cautery; no return; uterine hyperæsthesia relieved by iodoform by capsule and vector, and case wore Cutter stem pessary for over two years. Growth in left breast is quiescent; has been more or less disturbance in left axilla; diet for months of beef chopped and broiled; tea and coffee; later, entire wheat bread. 1893.
24. 1889. Woman. Drs. E. & J. A. Cutter	Abdominal fibro-cystic disease giving appearance of woman at full term; case aged 65; widow, one child; has run a boarding house, and worked very hard; splendid mind and good will power; broke left floating rib (one or more) some ten years previously; when first seen, had peritonitis; pelvis not involved; umbilical hernia.	Case did well under strict diet of chopped beef, and was able to travel ten miles to New York; after about a year became financially straitened, from which condition she never recovered; disease increased; received two applications of galvanism by abdominal puncture; softening and diminution of growth; aspiration of fluid chocolate colored and syrupy in feel; disease began to increase in left side, and caused death; post-mortem revealed much improvement in abdominal cavity, but a large epitheliomatous mass existed in left side.
25. 1890. Woman. Drs. E. & J. A. Cutter. Loc. cit.	Aged 64; disease in breast called cancer by regular physician; taken out by pastes, leaving large, open sore; patient in California.	Under systemic plans breast healed; patient came East in 1891, and pelvis was found to be packed with large growth. Has disappeared from observation.
22. Woman. 1882. Loc. cit. . . .	Discharged from Washington hospital with malignant disease of womb; seen by Dr. R. J. Nunn, of Savannah, Ga., and called cancer by him; patient unmarried; middle-aged.	Tumor gradually and wholly disappeared on systemic treatment; 1884, seen in N. Y. for first time, and found then an enlarged womb; 1887, no growth.
27. Woman. 1877. Loc. cit.; also, Feeding Patients Against the Appetite, case 3, Medical Register, April 2, 1887	Father dead of cancer of stomach; case sick in bed of great grief, caused by sudden death of last surviving daughter; cardiac hypertrophy and insufficiency of left auriculo-ventricular valve; attacks of angina pectoris; retroversion, engorgement, hardening of womb; eversion of os uteri; behind womb, four small, hard, marble-like tumors; profuse vaginal discharge, not bloody; loss of flesh and strength; nausea; aversion to all food	Fed, against the appetite, with beef, and only on the dictum that if not, would die of cancer of the womb; nausea left in about three weeks; was one year before could walk 500 feet; 1893, heart normal in size and action; uterine disease and post-uterine growth disappeared.

120 Broadway, Equitable Building, New York.

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

Second Annual Meeting, held in New York, October 4, 5 and 6, 1892.

WILLIAM J. MORTON, M.D., PREST.

FIRST DAY OCTOBER 4—EVENING SESSION.

(*Continued from page 254.*)

USE OF THE ROTARY TRANSFORMER IN MEDICINE.

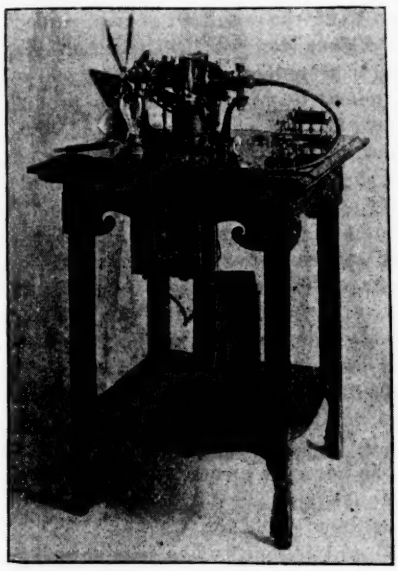
By R. L. Watkins, M.D.

The machine on exhibition is a combination motor and dynamo. By means of it, we can convert the electricity from a storage cell into motion and force for drilling and other purposes for which motion and force are needed; and can transform the storage current into one with a voltage varying from 0 to 150, as may be necessary—the ampèrage of course diminishing in proportion to the increase in voltage.

The current obtained is equivalent to that from forty primary cells, and is the "dynamo current," though the effect produced (on sensation and otherwise) is the same as by the current from a battery. Such a current has not been used heretofore, chiefly because, in the author's opinion, there has been no means of obtaining and applying it easily, cheaply and conveniently. It was with the idea of overcoming these obstacles that this machine was constructed.

The power, as I have indicated, is obtained from a storage battery—this being the safest and most convenient source.

While it is possible to keep these batteries charged and in order by primary cells, it has been found that it is much better to have them filled at an electric light station or



some place where they have special facilities for doing it—for instance, in New York the Storage Battery and Supply Co. They will also express batteries out of town.

[Mr. Bunce will describe the machine and cabinet and demonstrate its uses.]

1. Faradic.
2. Cautery.
3. Direct current.
4. Drill, etc.
5. Throat light.
6. Cystoscope light.

The Association then adjourned to the reception at the Electric Club.

Second Day, October 5—Morning Session.

The need of greater simplicity and uniformity in electro-therapeutic apparatus.

By W. J. Herdman, M.D., Ph.B., Professor of Diseases of the Nervous System and Electro-Therapeutics, University of Michigan.

In forming the purpose of asking the attention of the members of the Association for a few moments to the consideration of the subject of uniformity and simplicity in the apparatus employed for electro-therapeutic purposes, I was much encouraged by reading the proceedings of your first annual meeting. I then discovered, what I already felt must be the case, that I was not alone in the belief that the time has come for "standardizing" the instruments which individual experience has proved to be of service in adapting electricity to the cure of disease. I was impressed with the truth of the statement in the paper read at that meeting by Dr. Goelet upon "The Action and Application of the Faradic Current in Gynecology," that "imperfectly constructed apparatus is the cause of the indifferent results that have been obtained by various observers," and I found myself in hearty sympathy with the declaration of the present President of the Association when he said, during the discussion that followed, "A standard induction battery is desirable—a standard coil—a standard length of wire; then comparative observations could be made." That this opinion at that time prevailed among those present, was shown by the appointment of two committees, charged with the duty, as I understood it, of considering and reporting upon a suitable form of induction coil and milliamperè-meter for electro-therapeutic needs. It is my intent, at this time, to simply call the attention of the members of the Association to the importance of enlarging upon the purpose which called those committees into existence, and to urge upon you to persist in such efforts as are necessary to secure a standard for every piece of apparatus indispensable to a complete electro-therapeutic outfit.

We are convinced of the value of electricity as a therapeutic agent. We feel confident that we have through it gained good results. We know that we have brought about cures with it that could not have been effected by other means. We are satisfied that in all branches of medical and surgical practice it is capable of replacing to advantage certain methods of treatment now in vogue. Both here and elsewhere, members of this Association, and others, have furnished unimpeachable testimony in support of these propositions, and our concurrence in the opinion they express is the bond of our union in this Association. We meet with a view of interchanging such testimony and extending our knowledge, both as to the theories of the action of this mysterious force and the range of its efficiency in the practice of medicine and surgery.

But when it comes to a question of what form, what method, what machinery is best calculated to bring about a desired result in any particular case of disease, we are likely to be as various in our opinions as we are numerous in our membership. Any attempt that any number of us might make to secure the same result with the tools at our command would repeat the experiences at the Tower of Babel, and such efforts would end in like confusion. We are for the most part self-educated in the knowledge we have gained, and each has pursued his search for truth after his own method, and with instruments peculiar to himself, often self-devised.

But the time has come when a union of these individual experiences will result in mutual helpfulness, and the progress of electro-therapeutics toward that period when it will be regarded as one of the most, if not the most, exact methods of treatment, can be materially hastened; for I think we are convinced that second to no other therapeutic agent, electricity, in the treatment of disease, is capable of being established on a scientific basis.

But be it remembered, a science based upon one opinion is not a science in the true acceptation of the term, whatever otherwise be the scientific value of the personality that entertains it. A concensus of the opinions of many who have witnessed like results, from similar conditions, with unvarying accuracy, can alone command a respectful hearing, and lay the foundations of a science. If it is our desire and purpose, therefore, to inaugurate a *science* of electro-therapy, it is fitting that we bear in mind what are the conditions essential to this, and that we take heed of the obstacles that beset our pathway in attempting to meet these conditions, that we may wisely direct our united efforts toward the removal of sucy impediments. Among these obstacles I need not name the skepticism which has long prevailed in the minds of many worthy members of the medical profession regarding any possible therapeutic value to be derived from electricity. Such skepticism has been justified by the failure and lack of uniformity in results of those who have employed it, but to a much greater degree can it be traced to a natural repugnance aroused by the preposterous claims of blatant charlatanism, which has availed itself of the mystery that enshrouded the workings of this powerful agent to reap a golden harvest from credulous sufferers. The innocent agent must needs share the reproach justly due those who ignorantly and fraudulently

employed it, since the disgusted observer of such practices is not prone to nice distinctions. The dawn of true scientific methods witnesses such obstacles as these rise and float away like morning mist. Neither charlatan nor skeptic can withstand the truth, and if our confidence in the value of electro-therapy is well grounded on demonstrable facts, from them we have nothing to fear.

The real obstacles with which we have to contend in creating a scientific electro-therapy are:

1. A lack of systematic preparatory education in electro-physics and physiology.
2. A lack of uniformity in the appliances by which electric treatments are given.
3. A lack of simplicity in these appliances.

Not a very formidable array, and one which will readily yield before the united efforts of the members of this Assotion. The appliances that are now considered essential to a complete electro-therapeutical equipment are not few.

The physician who wishes to be furnished with all the apparatus whereby electricity is adapted to therapeutic needs must have:

1. A static or influence machine.
2. Continuous current generators, both stationary and portable, adapted, *a*, for ordinary treatment; *b*, for electrolysis; *c*, for cataphoresis; *d*, for cautery work; *e*, for lighting exploring lamps; *f*, for running motors.
3. Induction coils.
4. Current controllers or rheostats.
5. Milammeters.
6. Coulombmeters.
7. Electrodes of a variety of patterns.

None but the specialist would, in all probability, supply himself with so complete an outfit, and there are those who, with some show of reason, strongly advocate that the practice of electro-therapeutics be confined to the specialist. But this limitation is, to my mind, neither practicable nor desirable. That there will always be ample field for the special practice of electro-therapeutics, I have no doubt, but there is a wide range of disorders with which the general practitioner has to deal, wherein he finds electricity the most suitable agent he can employ, as has been well shown in the paper of Dr. Hutchinson, of Providence. And what is true of the general practitioner is true likewise of the physician or surgeon whose practice is limited to any class of diseases. There are none of them but do, or would find electricity, at times, their most efficient handmaid when they are made aware of its capacities.

This being the case the preparatory education needful for the right understanding of those principles of electric action which lie at the foundation of all intelligent use of it in therapeutics, should be required of every medical student. What one of you, who has acquired any skill in handling electricity in your practice, would have done so but for the knowledge you possess of electro-physics and physiology? And I venture to assert there is not one of you but deplores the fact, as I do most heartily, that in this respect his earlier education was not more systematic and thorough. Let us therefore, remember that every man owes a debt to his profession, and in no better way can he discharge it, than in doing what he can to perfect its methods and aid it in the attainment of better results. Let us not permit those who may follow us in this line of practice to be hampered by difficulties with which we had to contend, but give them, as we may be able, the benefits of our experience.

Instruction in electro-physics and physiology properly belongs to the medical schools, and should be included in their curriculum or among their entrance requirements. At present, however, there are but few schools where either of these provisions are made, and nine-tenths of medical graduates are sent out with little or no knowledge of the laws governing electric action, either without or within the human body. Colleges are seldom the leaders in broadening medical education, but self-preservation forces them to provide what the profession demands. This Association is in a position to fix the standard of requirement for the physician who wishes to practice electro-therapeutics, and sooner or later all colleges worthy of the name will conform to that standard by making suitable provisions in their course of instruction.

The remaining hindrances that I have mentioned as obstructing the progress toward a scientific electro-therapy it is the duty of this Association to remove. Uniformity in construction of the instruments employed, is the first step necessary to secure uniformity in results. By this means alone can our experience in treatment be made available for the discovery of general principles and laws. The literature on electro-therapeutics in the language of all civilized nations has become quite voluminous. There is much chaff mixed with the wheat that has appeared in text-books, monographs, and in periodical medical literature upon this subject. It is time that we undertake to prove all things, claimed in the name of electro-therapeutics, and hold fast to that which is good. To do this successfully our measuring rods must be of equal length.

Great skill and ingenuity has been displayed by physicians, electricians and mechanicians devising instruments for electro-therapeutic work and as a result we have in the market many admirable tools with varying degrees of excellence in one direction or another, but each aiming at some peculiar quality which has given rise to the greatest diversity in pattern, action and effect. Let us take, for example, any two patterns of induction coils, or static machines, or milliampèremeters now presented for our inspection by the manufactures represented at this meeting and we will find that upon the same patient, other conditions being equal, their action would differ largely. This statement I have taken frequent occasion to verify and I doubt not that many of you have made similar observations. I do not claim that with a "standard" apparatus in the hands of different operators the results would always be uniform, for the personal equation of the operator cannot be left out of the account, but the sooner we succeed in eliminating the wide and useless range of uncertainty that is the necessary consequence of the variety of appliances now in use the sooner will the value of this personal equation be determinable.

By fixing a standard for each piece of apparatus I have enumerated, the physician is not alone benefited. The manufacturer's risk is greatly lessened. He will then know what the practitioner of electro-therapeutics must have and can devote himself to supplying the need with the best article he can produce, and with confidence that it will find a ready sale whenever electricity is employed. Greater precision and uniformity in action in these appliances will render electric treatments more fruitful of good results and, through the simplifying of methods and making familiar to all the construction and pattern of instruments employed, the demand for them will rapidly increase.

It will be my pleasant duty as soon as standard instruments are adopted by this Association, to subject them to practical tests in laboratory and hospital, where careful records will be kept and the results made known, and with others doing the same we will soon have gathered a mass of statistics out of which a science of electro-therapy will grow rapidly and surely.

It is not a part of my purpose, neither do I presume to suggest any special form of apparatus as worthy of adoption as a standard by this Association. The plan already insti-

tuted by you, of selecting a committee composed of men whose knowledge and experience well fits them for the task assigned them, and of giving them a year in which to investigate and report, is the one best calculated to reach a conclusion and one in which all are most likely to concur, as to the best form of instrument to be adopted as a standard, and I am confident that I voice the wishes of a vast body of practitioners who daily use electricity in their practice, when I make the request that committees similar to those already appointed, be created at this meeting, whose duty it shall be to report at the next annual meeting, upon standards for the *static machine*, *constant current generators* and *electrodes*.

Reliability in action of the *static machine* has been found to depend very largely upon its construction. It has its limitations as to size and number of plates. It has a field in therapeutic uses peculiar to itself wherein it is capable of doing most excellent service. Its capacities should have the recognition of this body and the essential features in its construction for therapeutic work should be indicated. The *continuous or galvanic current*, while it is conceded to be more serviceable than any other form of electric energy which we employ. yet it is, as is well known, but seldom used by the practitioner, and I have found many specialists who have shunned it because of the perplexities that constantly arose from its mode of generation. But simple and efficient methods for generating and controlling continuous currents, both for office and bedside practice are in use and need but the authoritative sanction of this Asssociation to be generally adopted. As to *current controllers, or rheostats*, their form must be determined by convenience and in their construction, uniformity in design is not so important as efficiency in action. The use of the coulombmeter will, no doubt, become more general when our science has reached such a degree of advancement as to require the precision of electrolytic decomposition for determining dosage. For the present we must be content to put up with coarser tools until our hands become skilled for finer workmanship.

But in the matter of *electrodes* some attempt should certainly be made to bring order out of the chaos that now prevails in this kind of appliances, If it is generally agreed that *current density* plays the important role in treatments that is claimed for it by several well-known authors and teachers, then the *size*, *shape* and *material* of the electrodes through which the body is brought under the influence of such current should receive our careful attention.

With the introduction of uniformity must come simplicity in structure. When all the essential elements of an instrument are preserved simplicity is snonymous with efficiency and economy.

The American watch—an excellent time keeper—having done away with all superfluous parts, has found its way into the pocket of every school boy. Duplicates of its parts can be found at all jeweler's. The little jeweler around the corner can set it to rights at a moment's notice, provided its owner does not care to do it himself, while the unique and elaborate hand-made chronometer from Switzerland must be laid aside as useless upon the breaking of a cog.

Many a would-be therapeutist has had his enthusiasm for this field of practice dampened by the continual drain upon his purse, time, and good nature, required to keep his electric outfit in working order.

If the time arrives, as it will speedily with our help, when worn-out or corroded parts in electric apparatus can be renewed in a moment by the operator or his assistant, or an accident can be remedied by replacing a broken piece by a new one obtainable at the nearest supply store for a trifling cost, the science of electro-therapy will, in its course, have cleared the obstructions in the harbor and those who practice it will find it less difficult to preserve intact the third number of the Decalogue.

Discussion.

Dr. Hutchinson said the author had echoed his own sentiments completely, when he said that with our help, the time is coming when repairs to our apparatus can be easily and properly made. Our apparatus is altogether too complicated, and composed of too many parts, which are only accessible to the manufacturer. No part of an electrical apparatus used by a medical man should be so constructed that he cannot repair it, and it was on this account, that he had fought so hard and so persistently against the use of closed cells.

Dr. Goelet was glad to see that the author had recognized the difficulties he had to contend with in the use of electro-therapeutic apparatus, and how particularly annoying this lack of uniformity in construction was in consultation practice. For instance, a physician from a distant part of the State brought a patient into his office yesterday morning for consultation. He had used faradic applications without benefit, but the faradic apparatus which the speaker employed, gave her relief at once. The consultant told the attending physician how he could have a proper coil constructed from which he would obtain practically the same results, but he could not direct him to any manufacturer who would furnish him with such a coil from his regular stock.

In connection with the subject of electrodes, and the material for their construction, he desired to refer to a paragraph which he had seen in the *Pacific Record* for September 15, of this year, in which a short description is given of a new alloy of lead which it is claimed will take the place of platinum. It is very malleable alloy, which is scarcely acted upon acids, and it has been proposed to use it in the manufacture of accumulator plates. It consists of 945 parts of lead, 22 of antimony, and 13 of mercury. The lead is first melted, and then the antimony and mercury added in the order first mentioned, the mercury being added at the moment of pouring into the ingot mould. There has been a tendency to economize in the construction of apparatus, but this is a mistake. A few years ago, he had himself been guilty of this, for he had advocated the use of iron prepared by a special process. Further experience showed it to be unsatisfactory. Tin is a little better, but it is acted upon by the current, and it is possible that it may exert an injurious effect upon upon the interior of the uterus.

Dr. W. T. Bishop, of Harrisburg, Pa., thought the great obstacle to progress in the direction of uniformity and simplicity of construction was to be found in the fact that we did not ourselves know what we wanted. At present, it was only practicable to adopt a standard of strength and of interchangeability of parts. A sick machine is like a sick man—sick all over; and it is rare that a medical man is capable of taking proper care of even the simplest instruments.

Dr. Waite, on behalf of the manufacturers, said that the difficulties they met with were very great, and perhaps the chief of these is to be found, as had been already said, in the general lack of knowledge on the part of the purchaser as to the use and limitations of the different forms of apparatus. For instance, one medical man wrote to him recently to know if he could charge a storage battery from a static machine. The voltage of the instruments in the market is well known; the trouble is chiefly with the electrodes. These are usually *moistened*, when in use, instead of being thoroughly wetted. The great diversity of construction in faradic coils is well known, but the manner in which this

can be overcome is far from being settled. There is a difference in the cell which charges the coil, in the size of the wire, in the windings of the coil, the number of vibrations and many other factors, which must be taken into consideration. The only way to settle this matter is by actual tests and extended experiment, just as was done in determining the construction of the dynamo. The manufacturers are trying to make their apparatus as simple as possible, but they are constantly called upon to make this or that change to suit individual whims.

Dr. Nunn said that one of the most annoying things about this subject of the construction of apparatus, is the variations made by different manufactures, and even by the same manufacturer, in the screws used to make the various connections. If the committee could only induce the manufacturers to make the connections interchangeable, they would accomplish a great deal. Why should not this Association adopt a standard for plugs and screws, just as the Microscopical Society has done? In determining the construction of faradic coils, the committee will have to prescribe the proportion between the primary and secondary coils, but in adopting a standard, there should be a wide range permitted, and each point in construction, should be determined from a therapeutic standpoint. Much unnecessary confusion also results from the manufacturer making various changes without realizing the possible importance of these changes.

Dr. von Raitz thought a certain sum should be placed at the disposal of the committee for their investigations.

Dr. Kellogg said that for the past seven years, one of Brown-Sequard's assistants had been engaged in studying electrical currents by the graphic method, and for the past six months, he had himself been carrying out such experiments. So far, his results verified those obtained in Europe, and brought out many new and interesting features. By a proper arrangement of an electro-magnet and a solonoid, or coil of wire connected with a long and slender lever, it is possible to get tracings illustrating the character of each current. Studying the faradic current in this way, shows that the second current is very much stronger than the first, the first being impeded by induction, and the second being reinforced by the primary current. It is possible by proper construction of the apparatus, to partially equalize these currents. The current is also greatly modified by the adjustment of the induction apparatus.

Dr. Herdman, in closing the discussion, said he was gratified that there was such a harmonious expression of opinion concerning the necessity for the Association to take up this work. It was undoubtedly true, as had been said, that much of the trouble was due to our not knowing just what we wanted, and he could furnish hundreds of illustrations like that cited by Dr. Waite. Just before leaving home, he had received a letter from a college graduate of high standing, asking if two axo cells would give him all the current he needed, yet the writer did not state just what he wanted to do with the current! The speaker said he had nothing but praise for the manufacturers; in fact, he thought they had done much to educate us. They must, of course, aim to meet the demands made upon them, and it is a positive detriment to them, as a rule, to have their instruments made after some peculiar pattern, as this interferes with their general use. He was sorry to say that there were a few manufacturers who hoped by some peculiarity of construction to keep up their trade, but such sharp practice really results in throwing the instruments out of the market. The more uniform their construction, and the greater their simplicity, the larger will be the demand for the instruments. Admitting that we do not yet know just what we want, this is no reason why we should not make a step in the right direction. The same objection might have been made to any system of measurements at the beginning; standards frequently require to be changed, before a perfect system is constructed. We are ourselves responsible for what the manufactures are doing; they have taken the field because we have failed to do so. To inculcate upon his students the importance of simplicity of construction, he had taught them in his laboratory to begin with the simple Volta cell, and then to construct batteries of several cells, making the proper connections to obtain a certain required voltage. The speaker then exhibited a battery cell which he had devised for the sole purpose of illustrating simplicity of construction It has zinc and carbon elements, with bichromate solution; there is a simple rheostat on one side, and on the other, is a pole changer. The controller consists of a U tube filled with a saturated solution of sulphate of zinc, and of a platinum wire dipping into the solution, and admitting of adjustment. If the zincs have been accidentally left in the bichromate solution, they can be renewed in five minutes. The discouragement arising from the inability to make the needed repairs, leads many to abandon the practice of electro-therapeutics, and, therefore, it is to the interest of the manufacturers, as well as to the interest of the user, that the construction of these instruments should be simplified. But the responsibility rests upon us as a national organization, and the first step is to appoint a committee to investigate this subject, and in their work, they should not forget to give most thoughtful consideration to such physiological experiments as had been alluded to by Dr. Kellog. He suggested that three committees be appointed; one on static machines, one on constant current controllers, and one on electrodes.

(To be continued.)

BOOK REVIEWS.

FERMENTATION, INFECTION AND IMMUNITY. A NEW THEORY OF THESE PROCESSES WHICH UNIFIES THEIR PRIMARY CAUSATION AND PLACES THE EXPLANATION OF THEIR PHENOMENA IN CHEMISTRY, BIOLOGY, AND DYNAMICS OF MOLECULAR PHYSICS. By J. W. McLAUGHLIN, M.D., Austin, Texas. Copyright, 1892. Austin, Texas, 1892. Pp. 240.

The author of this little book will be recollected as having described a micrococcus in the blood of patients suffering from dengue or breakbone fever; his observations, though not yet confirmed on account of the absence of opportunity as no epidemic has occurred during the last two years or so, are about the only ones extant on the specific etiology of dengue.

McLaughlin's present work is an interesting contribution to the study of the processes and problems indicated in the title, problems just now occupying the minds of students and investigators the world over. The book really consists of a number of articles published here and there during the the last few years in which the etiology of acute, infectious diseases has been discussed from various standpoints; to these articles considerable new matter has been added. The "physical" theory of immunity here introduced is elaborated in an interesting manner, the relation between this theory and the bio-chemistry of to-day is established and on the whole, it must be said that the book will amply reward its perusal. There is no index, but the list of contents at the beginning is quite complete; yet the absence of an index really detracts from the book.

CHICAGO reports one thousand four hundred and seventy-nine deaths from typhoid fever during 1892, against one thousand nine hundred and eighty-seven during 1891.

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SATURDAY, MARCH 11, 1893.

SOME MEDICAL FRICTIONS.

The English medical public have protested with great indignation against the position of MR. LAWSON TAIT, the distinguished gynecologist, who has endorsed the anti-vivisection society in its attacks on medical men for experimental vivisection. The position he has taken, is so untenable from a scientific point of view as to suggest some grave defect of his inteligence. Charges and counter-charges have been made and much bitterness of feeling has been provoked. The impression one gets from this distance, is that however eminent a physician may become, it is not safe to trust to his judgment outside of his special studio. Being an eminent surgeon, gynecologist or specialist, in any department, does not bring superior judgment in other fields of science. Often men who have become prominent in some department of medicine, assume that such knowledge extends to all other topics, bringing with it equal capacity and wisdom. There are many LAWSON TAITS in this country, whose assumptions of knowledge are painful, and whose influence is not unfrequently a direct encouragement of the worst forms of quackery and an obstacle to progressive medicine. Almost every year investigating committees of the State legislatures are formed to ascertain and correct the abuse of incarcerating sane men in asylums for some mercenary object. These are sometimes encouraged and often directly instigated, by eminent practitioners, and persons not only ignorant, but devoid of common or reasoning sense. No one ever hears of practical results, from such committees, and no one is ever found who is sane and has been locked up in an asylum for fraudulent purposes. A few years ago the New York State legislature spent six thousand dollars to investigate such a case, which proved at last to be a most dangerous lunatic. Two such committees are now at work on similar charges, and thus the delusion goes on year after year. If those physicians who advise so wisely on these matters would turn their attention to the really fearful abuse and wrong, of permitting insane men to be at large, and only recognizing their conditions when they commit crimes, the most practical good would follow. Just now the same dangerous criticism and advice concerning cholera, and other epidemics, appear, coming from men who have no practical acquaintance with these diseases. Boards of Health will cite the opinions of persons as authority, who have no other knowledge except that obtained from the most superficial reading of newspapers. The significance of this will be apparent to every reader, and serves to bring out more distinctly than ever the fact, that whoever becomes a judge and critic of matters of science, must bring some claim to be heard, other than ability in other fields. The great surgeon's judgment on the conduct of a medical journal is of no more value than that of the country doctor. The asylum specialist, and the egotistical teacher in a medical college, are not to be accepted as authorities on matters outside of their every day work. The field of medical science has widened to such an extent that no one man, however eminent, can form a correct judgment of parts of the country he has never traversed. It is fatal to the intelligence of any medical man to join the numerous reform societies, whose work is based on fragmentary truths, that are yet only theories, and are not supported by persons who have the best opportunities to study and observe their assumed facts. Thus opinions on hypnotism, on criminality, inebriety, pauperism and prostitution, with other themes that the public are concerned with, and look to physicians for direction, should be given with great care, and not until the author is confident that he has mastered the facts and their probable meaning.

The old time practice of evolving from ones own inner consciousness, truths of science and practical life, will not bear the test of modern thought. The physician who has any opinions or advice to offer, must give some reasons or facts to sustain it, or have some experience that will add weight to his judgment.

Every year physicians are becoming more influential advisors in medical and hygienic matters in all communities. The need of a larger acquaintance with public sentiment and the evils that are inseparable to every neighborhood, demands better knowledge and a spirit to advise wisely on all occasions. To be skilful in diagnosis and therapeutical resources is not enough to make a great physician. The community demand something more from him as an educated man. A very good eastern physician is rated in his community as of excellent judgment in medicine, but an idiot on other topics. This man's egotism sustains him in the belief that his medical

knowledge, brings with it capacity in all other branches. Such men support anti-vivisection societies, and societies to prevent people from being declared insane, believes in specifics for consumption and inebriety; and advises against surgical operations on the supposition that the surgeon is a "crank," and thinks the knife the only medicine; he claims equal knowledge with experts on all topics, and superior disinterestedness, which gives his judgment great force. The evils which are constantly springing up from this course, are clearly chargable to the low standard of professional attainments in the past. Men have entered the profession, who were of defective judgment naturally, and who never had solid training. They may by industry, become fairly eminent in some department, but they will always suffer from narrowness, and astigmated vision of science beyond their every day life. Physicians of this class are always sources of trouble and controversy, wherever they go, and should be recognized and rated on the level where they belong. When this is done the general profession will not be disturbed with these weaknesses but pass them by unnoticed.

MUNICIPAL ASEPSIS.

Our most recent European exchanges inform us of little outbreaks of cholera in quite a number of localities, and they also tell of the greatest activity on the part of both National and municipal governments in efforts at placing all cities and towns in the cleanest possible condition. Special attention is given to the improvement of water supplies. Strict and stringent sanitary laws are enacted and rigidly enforced by the strong arm of monarchical governments, in the hope that such measures will prevent a breaking out and spread of the cholera scourge. The enactment of quarantine measures for the stoppage of Eastern immigration is also resorted to in Germany, and is being considered in England for the same purpose.

We regret that we are not able to report similar sanitary activities in many American cities and towns, every one of which is in a greater or less degree threatened by this same dreaded scourge.

Streets, alleys and sewers should be scrubbed and scoured until they are in as nearly an aseptic condition as possible.

Very few of our cities have a pure and uncontaminated water supply. This is a matter of the utmost importance. Within the past two years (1891 and 1892), there have been more than thirty-four hundred deaths in Chicago alone from typhoid fever, a disease that is known to be traceable either directly or indirectly to an impure water supply. Some other cities have suffered severely from the same cause. In order that the city may be recorded as in even an approximately aseptic condition, a vast amount of scrubbing, scouring and cleaning must be done.

Infectious diseases have their homes and breeding places in many of the vile sinks, called tenement houses, from which they are not only allowed, but made to spread here and there, through the cupidity and avariciousness of landlords and dealers in wearing apparel.

The Nation and many States are going through the process of change of political rulers. A hope is entertained that the new brooms will sweep clean in sanitary affairs, for there is certainly room for a world of improvement in many localities.

At such a time as this public health considerations are of prime importance, and the health authorities should be clothed with autocratic power. In this connection the regulation of the practice of medicine is of equal importance.

While it is lamentably true that the members of the medical profession are sometimes held up and publicly criticised as alarmists in the face of an impending epidemic, let us not carp too critically at such exhibitions of sublime ignorance, but proceed to show to the world that our special knowledge of the history and treatment of infectious diseases is not only rational, but susceptible of accurate demonstration. Further, the people should be thoroughly informed that a violation of sanitary and hygienic laws is certain to be followed by a suitable punishment.

Having performed her own duty in this regard, and RACHEL is made to weep and mourn for her children and will not be comforted; let her maledictions fall first upon the heads of those in authority, and then upon those whose avarice has made it possible for her to live and see her children taken from her by preventable causes.

Local medical societies should appoint committees to wait upon the executive and legislative branches of State and city governments for the purpose of indicating to them prophylactic measures that should be rigidly enforced at this particular time.

The passage of the following bill by the Legislature of Minnesota is of particular interest:

STATE OF MINNESOTA.

Twenty-eighth Session. S. F. No. 328

Introduced by Mr. Tawney.
February 16, 1893.

A BILL For an Act to Protect the People of the State of Minnesota Against the Importation of Acute Contagious Diseases by the Regulation of Interstate Immigration.

Be it enacted by the Legislature of the State of Minnesota.

SECTION 1. For the better protection of the people of this State against Asiatic cholera and other contagious diseases the State board of health may establish a system of quarantine against the introduction of pestilential diseases by the various railway and navigation companies doing business in the transportation of passengers across the borders of this

State; the members of the State board of health, or their properly constituted representatives, are authorized to board any railway conveyance used in the transportation of passengers across the borders of this State, or any vessel entering the waters of this State, for the purpose of sanitary inspection to ascertain the existence of cholera or other dangerous contagious diseases.

In case it is found any such conveyance named is infected with such disease, the said officer may, in his discretion, isolate and quarantine all passengers so infected or endangered by or from exposure, together with their baggage and effects, and detain the said conveyance or vessel until it is rendered safe by proper disinfection and fumigation.

SEC. 2. Any and all transportation companies shall afford the officers of the said board reasonable facilities for the sanitary inspection of cars and vessels by furnishing necessary transportation to inspectors, by detention of cars and navigable vessels during isolation of passengers, together with their effects, and shall immediately submit to the fumigation and disinfection of such conveyances and cars as may be deemed necessary by the board for the protection of the public health.

SEC. 3. The necessary expense of fumigation and disinfection of cars and vessels shall be at the expense of the owners of cars or vessels so inspected.

SEC. 4. When it is made apparent to the Governor of this State that any railroad company or other transportation company is not exercising due or reasonable vigilance against the introduction of Asiatic cholera or other dangerous contagious diseases, he shall announce such conclusion by proclamation, and thereupon and thereafter the entire expense of quarantining immigrants or emigrants or passengers shall be a direct charge against said company.

SEC. 5. Whenever the said board shall discover the existence of cholera or any infectious diseases on any railway car or vessel without the boundaries of this State, they shall cause notice of such fact to be served upon the agent or officer of the company operating such car or vessel, and thereupon and thereafter it shall be unlawful for such company or any of its officers or agents to bring or cause to be brought within this State such car or vessel, except it be in accordance with such reasonable rules and regulations as the said board shall adopt applicable to such case. Any person or corporation who shall violate any of the provisions of this act shall be punished therefor by a fine not to exceed one thousand dollars ($1,000) or by imprisonment in the State prison not more than one year, or by both such fine and imprisonment.

SEC. 6. This act shall take effect and be in force from and after its passage.

THE PATHOGENIC ACTION OF TYPHOID BACILLI ON ANIMALS.

GAFFRY, SIMONDS and FRAENKEL, and after them many others, have studied the pathogenic action of typhoid bacilli in animals by means of inoculation with pure cultures and the results have appeared, as a rule, to be due to an acute intoxication with the soluble products of the microbes rather than to an actual bacillary invasion and proliferation. Quite recently this matter has been thoroughly investigated by CHAUTEMESSE and WIDAL, whose previous joint work on the action of typhoid bacilli in animals is well known, and also by SANARELLI (*Annales de l'Inst.*, Pasteur, Nov., 1892), and the interesting results obtained by these investigators agree in all main points.

The somewhat contradictory results announced by previous workers were undoubtedly due to the fact that cultures of varying intensity were used in the experiments; the typhoid bacillus is of unstable virulence and appears to loose its activity soon, unless cultivated uninterruptedly. CHAUTEMESSE and WIDAL found that the virulence of the typhoid bacillus can be exalted by inoculating guinea pigs successively with the serous fluid found in the peritoneal cavity of an animal of this kind which has succumbed to the effects of an inoculation; that is to say, the first animal was inoculated subcutaneously with a certain quantity of fresh culture from the effects of which it died after twenty-four to forty-eight hours; a small quantity of the peritoneal serum of this animal, which was found to swarm with bacilli, was now injected into the peritoneal cavity of another animal which succumbed very rapidly, and by passing the bacilli in this way from animal to animal, their virulence was found to increase in a very remarkable manner. The preliminary injection of a moderate quantity of sterilized cultures of streptococci, or of the colon bacillus, or of proteus vulgaris, and then inoculating the same animals with cultures of typhoid bacilli, was also found to intensity the virulence of the typhoid germs in a most marked degree. The bacilli of typhoid fever would be found in large quantities and in pure culture in all the organs, in the blood, and in the serous cavities as well as the intestines; the spleen was greatly enlarged, the intestines congested, the Peyer's patches and mesenteric glands swollen and tumefied in the animals subjected to these experiments. The action of the soluble products of the microbes mentioned appeared to greatly and directly facilitate the invasion of the bacilli of typhoid fever. This point may throw some light on the etiology of enteric fever in man in whom the toxic products are produced in the intestinal canal by streptococci, by the colon bacillus and other microbes, which may so modify the general condition of health as to favor typhoid infection.

The investigators mentioned were also able to utilize the fixed virulence by typhoid bacilli created in the ways referred to for the immunization of animals against the typhoid virus. Immunity was produced by inoculating animals with a certain quantity of virulent culture in divided doses. There being an interval of several doses between each inoculation, and also by means of other methods. An immune animal remained unaffected by doses of virulent virus fatal under ordinary circumstances. The injection of serum from typhoid fever patients and from persons who had passed through an attack of fever also produced immunity, though of short duration, in guinea pigs against virulent virus. The next

step in this work was to show that the serum of animals rendered artificially immune was not only prophylactic but also curable, by injecting serum of a vaccinated animal into the body of a guinea pig soon after it had received a fatal dose of virulent virus, when great modification of the usual symptoms occurred and recovery ensued. Finally it was attempted to demonstrate what curative effect, if any, the injection of the serum of immunized animals would have on patients suffering from typhoid fever, and CHAUTEMESSE and WIDAL made two experiments of this kind on two patients, but the course of the disease was not modified. In spite of the failure of these efforts, it would nevertheless seem, that as long as the serum of animals vaccinated against typhoid infection has actual therapeutic properties, it will not be long before this important discovery can be successfully applied to the actual treatment of enteric fever.

MEDICO-LEGAL POINTS.

In a case recently tried in the Supreme Court of the State of Illinois, the following decision was given:

Siebert *v.* The People. Supreme Court of Illinois. (Opinion filed October 31, 1892.)

3. EVIDENCE—*Competency of expert to give his opinion.*—A practicing physician who is shown to be a graduate of a regular medical college, and to have practiced his profession for many years, is competent to give his opinion upon an hypothetical question setting forth the symptoms of a deceased person, whether the death was from the effects of arsenical poison, although he may not be shown to have had any case of such poisoning. A medical witness in giving his opinion as an expert, is not confined to opinions derived from his own observation and experience, but may give an opinion based upon information derived from medical books.

* * * * *

11. CRIMINAL LAW—*Instruction as to reasonable doubt.*—On the trial of a criminal case, it is not error to instruct the jury that it is not necessary to prove each link in the chain of circumstances relied on, or every fact in the case, beyond a reasonable doubt, but it is sufficient if, taking the evidence as a whole, they are satisfied beyond a reasonable doubt of the defendant's guilt.

* * * * *

15. EVIDENCE—*Offer of vial and box embraces contents.* When a vial and box containing poison is offered in evidence and admitted, the only object of offering them in evidence being to get the contents to the jury, an instruction to the jury not to consider the contents is properly refused.

DOMESTIC CORRESPONDENCE.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

The first article in THE JOURNAL for Feb. 25 causes me to make one more effort to set the profession right on the subject of "Drunkenness."

Webster is cited as *authority* on the meaning of the words —law and drunkenness, but it would take a very learned man to distinguish the difference Webster makes in the meaning of the two words, drunkenness and inebriety, and I do not think there is anything to be gained in quibbling over the question as to whether a man is a drunkard or an inebriate; and from a legal standpoint it is of no consequence. If there is ever a law passed for the protection of the drunkard in his many evil deeds, the same law will apply to the inebriate. The point to be settled is this: Is the drunkard responsible for his crimes? I claim that he is now, and ought to be hereafter. I will state a few reasons why I think so. Every State in the Union gives men a legal right to drink intoxicants, and notwithstanding the many laws prohibiting the sale of intoxicants, not one law says that man shall not have the right to drink. This is evidence that the law making power concedes man the legal right to drink or not drink, as he may elect. The law is silent until the results of *too much drinking* are manifested. So soon as man begins to violate law, whether drunk or sober, the right to check him is upheld in all law abiding communities. Now if the government is a unit in the opinion that all men have a right to drink intoxicants, how can it consistently say that a man shall not be held responsible when he violates this right and privilege by drinking *too much*. It is evident that the crime is not in the act of drinking (all men have a right to drink) but of drinking *too much*. I now venture the assertion that there is not a drunkard on the face of the globe that does not know that *too much whiskey* will make him drunk. And he further knows that if he takes this too much whiskey (in this country) he will likely get into trouble. Now apply this knowledge to any other species of crime, and see whether or not it is consistent to let the transgressor go free and unpunished.

Now, about drunkenness as a disease. If drunkenness is a disease when does it become so? How are you to know the victims? Is a man a drunkard *before* or *after* he drinks too much? I believe that the law will say that the drunkard is such only *after* drinking *too much*. I know that some learned men say that drunkenness is a hereditary disease, but this, if true, would only complicate matters. Let me show you some of the results that would happen if the law making powers should conclude that drunkenness is a hereditary disease, and not a vice. Every drunkard in the land would go unpunished; every criminal would plead disease as an excuse for crime. If he had been living soberly, he would claim that he had the disease in his blood, that his grandparents were drunkards; and most every man could prove that such was the case. How few men can boast of an ancestry clear of drunkenness? No, sir; this fad won't go. Drunkenness is a vice. The Bible defines it as such. Christianity teaches it and has taught it from the time of the apostles up to date.

The precedent that drunkenness is a legitimate excuse for crime would ruin any people that adopt it. It is contrary to reason, contrary to right, contrary to the Bible, contrary to God's established law, and lawyers and doctors should be the last men to say, let the drunkard go unpunished. I know that many drunkards become insane, but the law should make a very marked distinction between the two troubles. One, drunkenness, is a voluntary act, insanity cannot be helped. The law heretofore has been able to distinguish one from the other, and the physician who tries to make them identical is an ass. Without intoxicants it would be impossible to create drunkards, but the country has plenty of insane people who are in no sense, drunkards. This is enough to show the differentiation. Drunkenness is the result of too much intoxicants. Insanity is a result of a diseased brain. But why labor to prove established facts.

W. P. HOWLE, M.D.

Oran, Mo.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

Dear Sir:—It has this day been my privilege to examine a most marvelous instance of human physical precocity. The subject is a boy, Charles Edward by name, who was born unto Mitchell and Mary Jane Paulk, who farm for a livelihood in Irwin county of this State, on the 24th day of

November, 1888, and is now four years and three months old. He measures around the chest, 29½ inches, shoulders, 37; waist, 30; hips, 34; is four feet, three inches high, and weighs 90 lbs. The hair under the arms and over the pubes, and the genitals are as fully developed as those of the average adult. There is neither mental precocity nor imbecility. There are 20 decidual or milk teeth, and he has a splendid bass voice. There was nothing unusual at birth, at which time he is supposed by the parents to have weighed about eight pounds. The father weighs 189 pounds, the mother 110 pounds, and there are three other children of natural proportions in good health. This is a case having but few parallels in history—notably, that described by Mr. Dawkes, a surgeon at St. Ives; the boy of "Salamus," mentioned by Pliny, and that seen by Craterus, who was in the short space of seven years, an infant, an adult, a father, an old man and a corpse. J. G. HOPKINS, M.D.

Thomasville, Ga., Feb. 23, 1893.

MISCELLANY.

THE ELEVENTH INTERNATIONAL CONGRESS OF MEDICINE

Will be held in Rome, September 24 to October 1, 1893. President, Prof. G. Baccelli, Rome; Treasurer, Prof. L. Pagliani, Rome; Secretary-General, Prof. E. Maragliano, Genoa.

The inauguration of the Eleventh International Congress will take place the 24th of September, in the presence of H. M. the King of Italy.

The work of the Congress will begin in the nineteen Sections on the morning of the 25th of September. It will be continued in accordance with the arrangements to be made and published both for the general sessions and the Sections. Some of the general sessions will be devoted to scientific addresses delivered by scientists of all nations.

LIST OF THE SERIES.

1. Anatomy; 2. Physiology; 3. General Pathology and Pathological Anatomy; 4. Pharmacology; 5. Internal Medicine; 6. Diseases of Children; 7. Psychiatry, Neuropathology and Criminal Anthropology; 8. Surgery and Orthopedy; 9. Obstetrics and Gynecology; 10. Laryngology; 11. Otology; 12. Ophthalmology; 13. Odontology; 14. Military Medicine and Surgery; 15. Hygiene; 16. Sanitary Engineering; 17. Dermatology and Syphilology; 18. Forensic Medicine; 19. Hydrology and Climatology.

REGULATIONS.

1. The Eleventh International Congress of Medicine will be inaugurated in Rome, on the 24th of September, 1893, and will close on the 1st of October.

2. Any physician may become an active member of the Congress by fulfilling the conditions of membership, inscribing his name, and securing his admission ticket.

3. Scientists of other professions who, through their special studies, are interested in the labors of the Congress, may acquire the rights and assume the duties of active members, and participate in the work of the Congress, both by communication and discussion.

4. The fee for admission to the Congress is twenty-five francs, or five dollars.[1] It entitles to a copy of the Transactions of the Congress, which will be forwarded to the members immediately after publication.

5. The character or the Congress is strictly and exclusively scientific.

6. The work of the Congress will be divided amongst nineteen Sections; every member is requested to indicate, on paying his admission fee, the Section for which he desires to be inscribed.

7. The provisional committee will arrange the appointment, in the opening session, of the permanent officers. There will be a president, three vice-presidents, a number of honorary presidents and secretaries. Each Section will elect, in its first meeting, its President and a certain number of honorary presidents, who shall alternately take the chair during the session. Some of the secretaries will be chosen from among the foreign members, in order to facilitate the recording both of communications and of discussions in the different languages.

8. There will be daily sessions, either general or sectional. The times and numbers of the general sessions, and the business to be transacted in them, will be arranged by the President of the Congress.

9. The general sessions are reserved, *a*, for the consideration of the common work of the Congress and its common interests; *b*, for addresses and communications of general interest and importance.

10. The addresses in the general sessions, and in such extraordinary sessions as may be arranged, will be delivered by members chosen by the committee for the purpose.

11. Papers for and communications to the Congress must be announced on or before June 30, 1893. A brief abstract of every paper and communication, with their conclusions, must be sent to the committee on or before July 31. All of them will be printed and distributed to the members by authority of the president. Such as arrive after that date cannot be expected to find a place on the regular order of business, and will be accepted only if time will permit.

12. The business of the Sections will be arranged by their presidents, who will also determine the hours of meeting, avoiding those reserved for the general sessions. Two or more Sections may hold joint meetings with the consent of their presidents. There will be no vote on scientific questions.

13. Fifteen minntes are allowed for the reading of a paper or communication. In the discussion every speaker can have the floor but once, and for five minutes only. To close the discussion the author of the paper is allowed ten minutes. Additional time may be given him by the president, by special resolution of the Section, if the importance of the subject under discussion appear to require it.

14. The manuscript of all addresses, papers and communications read either before a general session or a Section must be handed to the Secretary before the close of the meeting. A special committee on publication, appointed by the president, will decide which or what part of them shall be published in the Transactions of the Congress. Such members as participate in the discussions are required to hand to the Secretaries their remarks in writing.

15. The official languages of the sessions are, Italian, French, English and German. The regulations, programs and daily bulletins will be published in the above four languages. During the meetings, however, a member may be permitted to use for a brief remark, any other language, provided some member present expresses his willingness to translate such remarks into any of the official languages.

16. The president directs the discussions according to the parliamentary rules generally obeyed in similar assemblies.

17. Persons not classified under Article 3, who are interested in the labors of a special section, may be admitted by the president of the Congress. They will receive a special ticket on paying their admission fee; will not be entitled to a copy of the Transactions; and cannot speak in the general sessions nor in any section other than that for which they were inscribed.

18. The president may invite or admit students of medicine to attend and to listen. They will be given a special admission ticket, free of charge.

GENERAL INFORMATION.

Journeys and Reduction of Fares.—The provisional committee has made arrangements with the different Italian and foreign railway and navigation companies, in pursuance whereof special reduced prices have been granted on the steamers and railways of this country and of the countries which the members of Congress are to traverse.

In Italy the members will find tickets for round trips, starting from Rome; they will thereby be enabled to visit the most important cities and the various universities. In regard to this, further notice will be given.

The Ladies of the Members will be furnished ladies' tickets, which will entitle them to the reduced fares granted to the members, and to participate in the festivities connected with the Congress.

Festivities.—Besides the receptions which the kind and hospitable citizens of Rome will offer to the members, the Italian colleagues will endeavor to return to the best of their power, the kindness they experienced during their stay abroad.

On some evening yet to be decided, the members of the different sections will join at a dinner which will be given in one of the first hotels of Rome.

[1] Money order to the Treasurer, Professor Comm L. Pagliani, Rome, Italy.

The Italian physicians have formed special committees to show the most hearty and kindly hospitality towards the foreign colleagues.

International Exhibition of Medicine and Hygiene.—On the occasion of the Eleventh International Medical Congress, an Exhibition of Medicine and Hygiene will be inaugurated in Rome, which will gather all that may practically interest physicians and specialists. A special committee has already insured the coöperation of all the most important manufacturers of the world.

Hotels.—All the first and second-class hotels of the Italian capital will afford to the members, during their stay, all desirable comforts.

THE TRI-STATE MEDICAL SOCIETY OF IOWA, ILLINOIS AND MISSOURI will meet in Keokuk, Ia., Tuesday and Wednesday, April 4 and 5, 1893. Following is the program:

1. A New and Rapid Method of removing the Uterus, with Specimens, Emory Lanphear, M.D., Kansas City, Mo.
2. Professional Secrets, W. R. Allison, M.D., Peoria, Ill.
3. Cardiac Stimulants, W. H. McGaw, M.D., Swedesburg, Ia.
4. Treatment of Uterine Fibroids, J. H. Buehler, M.D., Revere, Mo.
5. Sanitary Science *vs.* Epidemics, Geo. P. Neal, M.D., Ft. Madison, Ia.
6. Some Gall-Stone Cases, J. F, Keeper, M.D., Sterling, Ill.
7. J, M. Shaffer, M.D., Keokuk, Ia., subject not announced.
8. Cerepro-Spinal Meningitis, J. A. Schreck, M.D., Cameron, Ill.
9. Cystitis, with Post-mortem Specimen, R. L. Murdy, M.D., West Grove, Ia.
10. Ellen H. Heise, M.D., Canton, Ill, subject not announced.
11. Bacteriological Diagnosis, Conrad Meyer, M.D., Keokuk, Ia.
12. Observations in a recent Epidemic of Typhoid Fever, A. J. Baxter, M.D., Astoria, Ill.
13. Some Accidents in Parturition, J. W. Holland, M.D., Osceola, Ia.
14. Impetigo Contagiosa following Vaccination, Louis Becker, M.D., Knoxville, Ill.
15. H. C. Eshbach, M.D., Albia, Ia., subject not announced.
16. Fractures of Long Bones, John I. Skelly, M.D., Pekin, Ill.
17. Puerperal Fever, C. C. Heady, M.D., Bloomfield, Ia.
18. Amputation above the Hip Joint, E. J. Blair, M.D., Monmouth, Ill.
19. M. S. Marcy, M.D., Keokuk, Ia., subject not announced.
20. *a*—Treatment of Intra-cranial Lesions; *b*—Demonstration of Intestinal Anastomosis by Murphy's Buttons, C. E. Ruth, M.D., Keokuk, Ia.
21. Bacteriology of Female Genital Tract, O. B. Will, M.D., Peoria, Ill.
22. Mercuric Intoxication, J. Fred. Clarke, M.D., Fairfield, Ia.
23. Epilepsy, Charles W. Hall, M.D., Kewanee, Ill.
24. L. B. Ryan, M.D., Galesburg, Ill., subject not announced.
25. The Rubber Bulb as an Aid in Intestinal Surgery, Francis Reder, M.D., Hannibal, Mo.
26. Localization in Diseases of the Spinal Cord, Frank Norbury, M.D., Jacksonville, Ill.
27. Lecture; subject not announced, Woods Hutchinson, M.D., Des Moines, Ia.
28. Prostitution, its Cause and the Relation of the Medical Profession to its Abolishment, J. F. Percy, M.D. Galesburg, Ill.
29. Cancer of the Cæcum, W. B. Sisson, M.D., Kahoka, Mo.
30. George Edward Marshall, A.M., M.D., Keokuk, Ia., subject not announced.
31. W. E. H. Bondurant, M.D., Downing, Mo., subject not announced.
32. Hints on Treatment of Typhoid Fever, S. K. Davis, M.D., Libertyville, Ia.
33. Removal of a Foreign Body from the Larynx, W. B. Maddox, M.D., Montrose, Ia.

W. H. MARTIN, M.D., President. J. M. BALL, M.D., Secretary.

SECTION OF LARYNGOLOGY AND OTOLOGY.—The Section of Laryngology and Otology, whichis now to be counted among the most flourishing and productive of the Association, promises another strong program for the Milwaukee meeting. Papers are announced by: E. L. Shurley, Detroit; C. H. Knight, N. Y.; H. Knapp, N. Y.; D. B. Delevan, N. Y.; Leartus Conner, Detroit; Alexander Randall, Philadelphia; C. W. Richardson, Washington, D. C.; F. Crossfield, Hartford; Normal H. Pierce, Chicago; George Williamson, Omaha; H. C. Heath, Indianapolis; E. Cutter, N. Y.; C. H. Burnett, N. Y.; Holbrook Curtis, N. Y.; W. H. Dale, Pittsburgh; E. Fletcher Ingals, Chicago; Lucien Howe, Buffalo; S. G. Miner, Detroit; A. B. Thrasher, Cincinnati; D. S. Campbell, Detroit; Don M. Campbell, Detroit; S. McCuen Smith, Philadelphia; A. J. Erwin, Mansfield; S. G. Labney, Louisville, and others.

To participate in the discussions are: Drs. W. E. Casselberry, Chicago; Samuel Sexton, N. Y.; Dr. Reeves, Toronto; Dr. Brown, Toronto, and others. Members of the American Medical Association, who desire to contribute, and others who have been invited to do so, are requested to send the title of their papers before May 1, to the Section Secretary, Dr. J. E. Boylan, 113 Broadway, Cincinnati, in order that they may appear in the preliminary list.

PAN-AMERICAN MEDICAL CONGRESS.—SECTION ON HYGIENE, CLIMATOLOGY AND DEMOGRAPHY.—Persons proposing to present papers before this section are requested to communicate with either of the undersigned *immediately*, that the subjects may be properly classified for the program of the proceedings of the Congress. The only limitation as to subject matter is that it shall have a sanitary climatological or statistical bearing. Members of the Section on State Medicine of the American Medical Association, of the American Public Health Association, the American Climatological Association, the American Academy of Medicine, and of State and Municipal Boards of Health, are especially invited to contribute the results of their several experiences. The authorized languages of the Congress being Spanish, Portuguese, French and English, papers may be presented in either, to be translated in the others, for which reason their text should be in the hands of the secretaries at the earliest possible date. Peter H. Bryce, M.D., Secretary, (English) Toronto, Canada; Pedro José Salicrup, M.D., Secretary (Spanish), 129 East 12th Street, New York City. Albert Gihon, M.D., President, 145 East 21st Street, New York City.

SECTION ON MEDICAL PEDAGOGICS.—The Pedagogic Section will devote its attention especially to the history of the development of medical education in America.

In the papers presented by leading teachers, recent advances in methods of instruction will be considered.

The *art of teaching*, which is regarded as a study of great interest in other branches of learning, has received hitherto but little attention from the medical profession.

The Section on Medical Pedagogics will therefore be made a prominent feature of the Congress and it is hoped that those interested in medical education will coöperate in the work of this Section by being present, and by actively engaging in the discussion of subjects presented.

Any inquiries or communications may be made through the secretaries. J. Collins Warren, M.D., Executive President, Boston, Mass. Charles L. Scudder, M.D., English speaking Secretary, Boston, Mass.; Wm. F. Hutchinson, M.D., Spanish speaking Secretary, Providence, R. I.

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from February 25, 1893, to March 3, 1893.

Major Edward B. Moseley, Surgeon, now on duty in Washington, will report in person to the Surgeon-General of the Army for duty in his office, as soon as Major Robert M. O'Reilly, Surgeon, shall report for duty as attending surgeon in Washington. By direction of the Secretary of War.

Major Robert M. O'Reilly, Surgeon, the suspension of the order directing him to report for duty as attending surgeon in Washington is, by direction of the Secretary of War, removed.

Major Robert M. O'Reilly, Surgeon, having reported to the Major General commanding the Army, is assigned to duty as attending surgeon in Washington, to date from February 28, 1893.

Major John H. Bartholf, Surgeon U. S. A., is granted leave of absence for six months, to take effect March 13, 1893, with permission to go beyond sea.